

Optimizing Adaptive Performance: Exploring Organizational Learning Culture across Generations

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ABSTRACT

Purpose: The purpose of this research is to explore the relationship between the organizational learning culture and the adaptive performance of employees in a diverse, multigenerational public sector workforce consisting of Baby Boomers and Generations X, Y, and Z. We also seek to determine whether specific factorial components of the organizational learning culture, namely employees' active participation in team learning and collaboration, their consistency in dialogue engagement and inquiry ventures for knowledge sharing and acquisition, their perseverance in continuous learning, and the embedded systems that the organization has at its disposal, have a strong positive impact on enhancing their interpersonal adaptability, as well as on the training and learning efforts they exert for improvement as organizational performance outcomes.

Methodology: Using two measurement instruments, the Dimensions of the Learning Organization Questionnaire (DLOQ) with 7 factors and 21 items, and the Adaptive Performance Scale with 5 factors and 19 items, the current research has adopted a quantitative approach, using the survey method, to collect data from 238 employees of the Public Employment Services (PESS) in Greece.

Findings: Findings illustrate a lack of statistical significance in the results for Baby Boomers and Generation Z, thus, the analysis focuses on the X and Y generations. Positive correlations, notably within Gen Y and Gen X, are identified between Team Learning and Collaboration (TLC), Dialogue and Inquiry (DI), and Interpersonal Adaptability (IA). Furthermore, Training and Learning Effort (TLE) that both generations put into acquiring new skills and competencies display positive correlations with Continuous Learning (CL) and the Embedded Systems (ES) the organization provides. However, specific negative correlations are generated, indicating intricate associations between dimensions of Organizational Learning Culture and specific facets of Adaptive Performance. These negative associations signify commonalities and differences in preferences and perceptions, and specify complexities in how different generations perceive and respond to organizational environments.

Implications for theory and practice: This study indicates practical implications for organizational leaders, emphasizing the positive impact of team learning, collaboration, and dialogue on interpersonal adaptability for Generations X and Y. Tailoring adaptive strategies to each generation's perceptions is important, with Generation X benefitting from a balance between autonomy and stability, while Generation Y improves performance under collaborative leadership and innovative-focused learning programs. Negative associations for Generation X underscore the need for customized training and flexible work arrangements. The research contributes theoretically by validating generational differences and proposing a framework that considers unique traits across workforce generations in the

public sector. Insights into work-life perceptions aid HR practitioners in refining strategies to align learning approaches with distinct generational preferences, while observed negative relationships prompt further exploration for refining theoretical frameworks.

Originality and value: The research contributes significantly to the field of Entrepreneurship and Human Resources Management by exploring the relationship between organizational learning culture (OLC) and adaptive performance (AP) within a diverse multigenerational workforce – an often-neglected dimension in the public sector. The study not only reaffirms the positive influence of team learning, collaboration, and dialogue on interpersonal adaptability of the employees, but explores deeper generational-specific implications. Practical recommendations for customised leadership approaches, continuous learning initiatives, and the integration of embedded systems enrich the research's applicability. The findings record the challenges faced by the neighbouring Generations X and Y, offering a comprehensive association of their preferences and proposing targeted strategies, alongside practical recommendations and theoretical extensions for joint, homogeneous approaches their leaders and managers can adopt.

KEYWORDS

Multigenerational workforce; Public sector; Adaptable performance; Training and learning; Sustainability and resilience; Generational diversity

1. Introduction

In recent times, the public sector has witnessed significant dynamic shifts and challenges. These are primarily influenced by factors such as technological advancements, demographic shifts, and evolving societal expectations. As a consequence, the ability of public sector employees to learn, adapt, and perform effectively has become increasingly important (Viterouli et al., 2023a). These factors contribute to a complex and challenging environmental landscape for the public sector workforce. New technologies necessitate the acquisition of new skillsets, as they automate tasks and change communication methods (Chen, 2021). Demographic shifts create a multigenerational landscape with diverse working styles and potential knowledge gaps (Jones et al., 2018). Additionally, evolving societal demands necessitate a more responsive, transparent, and efficient public service (Gazier, 2020). A strong organisational learning culture fosters continuous learning, knowledge sharing, and collaboration, which can equip public servants with the skills and knowledge to navigate these challenges, embrace changes and leverage them to its advantage. By acquiring new skills to utilize emerging technologies, employees can foster innovative approaches to public service delivery. Effective collaboration across generations enables public servants to capitalize on the strengths of different age groups and bridge knowledge gaps through continuous learning, inquiry and collaboration. Ultimately, this adaptability allows the public sector to identify and respond to evolving societal needs, develop innovative solutions to complex problems, and consistently deliver high-quality services in a dynamic environment.

This study describes an industry priority by investigating how Organizational Learning Culture (OLC) impacts Adaptive Performance (AP) in a multigenerational public sector workforce, extending the focus to individual characteristics and generational dynamics (Krekel, Ward, & De Neve, 2019; Tan & Antonio, 2022). Adaptive performance demonstrates resilience and enables individuals and organizations to sustain and/or prosper in dynamic environments (Hartmann et al., 2020). The public sector presents a unique context for studying OLC and AP compared to private companies. Workforce diversity and generational dynamics are amplified, leading to complexities in communication, collaboration, and adaptation to change (Jones et al., 2018; Malik, & Garg, 2017; Gazier, 2020).

Effective leadership, training, and skill development need to be tailored to diverse learning styles across generations (Seeg, Gauglitz & Schütz, 2022). Additionally, public sector organizations may have limited resources for training and development compared to the private sector. These unique challenges necessitate a deeper exploration of how OLC can foster adaptive performance within this specific context.

Many theorists and practitioners have found that adaptive performance is closely associated with organizational learning, and specifically, the Organisational Learning Culture (Kim, 2021; Basten & Haamann, 2018). However, the focus has largely been on private companies, particularly within hospitality and IT sectors (Klkeefstra, Altan & Stoffers, 2020; Jain & Maheshwari, 2020). Within the public sector, studies have primarily explored the healthcare field (Goula et al., 2021) and education (Chaudhuri, Drakpa & Zangmo, 2022), highlighting the gap in understanding how OLC interacts with a multigenerational workforce to foster adaptive performance in other public service contexts.

This study aims to address this critical gap by investigating how OLC dimensions interact with generational dynamics to influence AP within the public sector. We focus specifically on the context of Public Employment Services (PES) in Greece. Drawing on the theoretical frameworks of Marsick and Watkins (2003), the Dimensions of the Learning Organisation Questionnaire (DLOQ), and Charbonnier-Voirin & Roussel's (2012) Adaptive Performance Scale, this research equips human resource professionals with valuable tools to identify generational dynamics, leverage their strengths, and discover potential knowledge gaps. This knowledge can empower them to design policies and strategies that foster a strong OLC within the challenging public sector environment, ultimately improving the adaptive performance of the workforce.

This research utilizes survey data collected from 238 employees within the PES context in Greece. By analysing this data, we showcase the applicability of targeted approaches to address generational differences and acknowledge the limitations of a "one-size-fits-all" approach (Singh et al., 2023). This research provides public sector leaders with valuable insights to assess relationships and estimate performance by tailoring learning programs, enhancing teamwork, and addressing skill gaps. By implementing these strategies, public sector leaders can ultimately foster better cooperation and engagement within the workforce. To explicitly explore these parameters, this paper focuses on specific OLC and AP dimensions that clearly establish the factors relating the Public Employment Services' organizational learning culture to the adaptive performance of its workforce.

A key area of exploration focuses on Dialogue and Inquiry (DI) and its relationship to Interpersonal Adaptability (IA) among public servants. While existing research suggests a positive link between these two constructs (Malik & Garg, 2017), its application within the public sector, particularly concerning how it affects each generational cohort, remains understudied. Public sector workplaces often have a multigenerational workforce, and fostering a culture of open dialogue and inquiry is crucial for knowledge exchange and effective collaboration across generations. This study aims to explore DI's unique role in directly enhancing IA within the public sector context. We examine how different generational cohorts respond to and benefit from a culture that encourages dialogue and inquiry. For example, younger generations may be more comfortable with open communication platforms, while older generations might prefer more structured forms of inquiry (Jain & Maheshwari, 2020). Understanding these preferences is crucial for informing interventions and training programs that can effectively nurture interpersonal skills across these groups (Hartmann et al., 2020; Park & Park, 2019).

Another area of focus is the relationship between Team Learning and Collaboration (TLC) and Interpersonal Adaptability (IA). It is important to examine the direct influence of TLC on IA within each generational cohort. By pinpointing how fostering collaborative environments (Ali et al., 2020; Korhani, 2021) directly enhances the adaptive people skills needed for effective public sector

performance (Mohamad et al., 2019), the study aims to provide actionable strategies and valuable insights that can help bridge the generational gap within the public sector workforce. Generational differences in communication styles and preferred collaboration methods can hinder the effectiveness of TLC (Jones et al., 2018). This study investigates how different generations respond to collaborative environments and how interventions can be tailored to promote teamwork and knowledge sharing across age groups. Identifying these variations can inform the development of targeted approaches that leverage the strengths of each generation and foster a more cohesive and adaptable public sector workforce.

The association between Continuous Learning (CL) and the Training and Learning Effort (TE) employees exert for knowledge and skill acquisition is another focus. By examining how CL directly translates into increased TE for each generation (Burns, 2020), this research aims to inform targeted interventions in crafting learning strategies (Bonfield et al., 2020). These strategies can maximize engagement and effort across the entire, multigenerational workforce. Generations often have distinct learning preferences and varying levels of comfort with technology-based learning tools (Seeg et al., 2022). This study explores how these differences impact an individual's CL and translates into TE. By identifying these variations, we can develop learning strategies that cater to the specific needs and preferences of each generation, ultimately maximizing their training efforts and fostering a culture of continuous learning within the public sector.

Furthermore, the study investigates how Embedded Systems (ES) available to public sector employees can support their Training and Learning Effort (TE). Limited research exists on how systems or technological integration (Hailekiros & Renyong, 2016; Dakkak et al., 2021) influences TE within the context of generational competency in the public sector. This exploration seeks to guide the optimization of systems-driven learning approaches (Zhang, 2022) that align with the performance backgrounds of different cohorts. The adoption and comfort level with technology-based learning tools can vary greatly across generations (Seeg et al., 2022). This study investigates how different generations utilize and benefit from ES in their learning efforts. Hence, we can develop strategies to optimize the use of ES and ensure they effectively support the training needs of a multigenerational public sector workforce by exploring these differentiations.

Finally, the study concludes by examining the direct relationship between Organizational Learning Culture (OLC) and Organizational Performance (OP). While this relationship has been analysed in many contexts across different industries and business types (Kim, 2021; Kanten et al., 2015; Park et al., 2020; Xie, 2019), to our knowledge, no in-depth analysis has been conducted specifically for the distinct generational cohorts present in the public sector workplace (Park & Park, 2019; Xie, 2019; Gorostiaga et al., 2022). In light of these generational dynamics and disparities within the public sector, the study seeks to answer the following research questions:

RQ1. How does Dialogue and Inquiry (DI) influence Interpersonal Adaptability (IA)?

RQ2. Can Team Learning and Collaboration (TLC) improve Interpersonal Adaptability (IA)?

RQ3. What is the impact of Continuous Learning (CL) on the Training and Learning Effort (TE) exerted by the public servants?

RQ4. Do Embedded Systems (ES) aid the Training and Learning Effort (TE) employees devote to improve their skills and competencies?

RQ5. Does Organisational Learning Culture (OLC) impact Adaptive Performance (AP)?

The paper comprises six sections. The first frames the theoretical context and research contribution. The next details research methods, covering tools, data collection, demographics, and sampling. The third presents survey results and hypotheses testing. The subsequent section presents the analysis, displaying findings descriptively, analytically, and interpretively. The penultimate part addresses limitations, implications, future research and summarizes insights.

2. Literature review

The public sector workforce comprises multiple generations – Baby Boomers, Generation X, Millennials, and Generation Z – each bringing distinct perspectives, experiences, and approaches to both learning and work due to historical, societal, and technological influences (Johnson & Johnson, 2010). Recognizing and understanding these generational differences are essential for cultivating an organizational learning culture (OLC) that enhances adaptive performance. Currently, these four distinct age groups working alongside each other have their own characteristics, influenced by social, political, and economic factors, though, mainly attributed to Western societies (Jones et al., 2018).

Baby Boomers (1946 – 1964), the seniors of the workforce, embody the post-World War II era's optimism and simplicity. Characterized as the 'Me' generation, they prioritize personal growth and success, maintaining a strong work-centric approach. Despite their assertiveness and inclination for risk-taking, this generation exhibits a collaborative nature, valuing teamwork. Their work history reflects a commitment to job security, loyalty, and strong work ethics. Actively engaging in projects, they appreciate innovation, coaching-style feedback, and often assume mentoring roles (Al-Asfour & Lettau, 2014; Mulvie, 2021).

Generation X (Xers – 1965 to early 1980s) were raised with an independent and pragmatic upbringing, though, facing uncertainties, job instability, and downsizing. This led them to resist authoritarian structures and become adept at technology to navigate challenges. They are known for autonomy, flexibility, and adaptability but resist work-related changes that impact their personal lives (life-centred). Entrepreneurial in nature, they cope with dynamic, diverse, and enjoyable work environments where resources for success are provided. They prioritize meaningful work, training, development, and satisfactory compensation (Solaja & Ogunola, 2016; Korhani, 2021).

The consecutive generation, the Millennials (Generation Y/nexters/internet Gen – early 1980s to mid '90s) grew up during the digital age. Generation Y are tech-savvy, competitive, and skilled multitaskers. They seek challenges, growth, and development, considering training and mentorship as continuous learning opportunities. Strongly self-aware, they are inclined to leave organizations if change is unsatisfactory. They desire unique and meaningful work experiences, a fun work-life balance, and are recognized for their participative, collaborative, and team-playing nature. They actively engage in group identity, decision-making, and cutting-edge ventures, valuing interpersonal relationships and direct feedback (Arrington & Dwyer, 2018; Singh et al., 2023).

The most recent entrants to the workplace, Generation Z (the Post-Millennials – mid '90s to early '00s) were born amidst advanced technology and innovation, and are characterized as tech-driven, globally conscious, entrepreneurial, and progressive. They are inherently independent, self-directed, and adept at multitasking. Despite their individualistic nature, they collaborate well with Millennials due to shared technological understanding. They appreciate personalized approaches and work conditions, actively seeking creativity and challenges in their work experiences (Viterouli et al., 2023b; Dimock, 2019).

By harnessing the unique strengths and perspectives of each generation, the public sector can cultivate a truly dynamic and adaptable workforce, prepared to tackle the challenges and opportunities of the future. Organizational Learning Culture (OLC) refers to the shared values, beliefs, and practices that promote continuous learning, knowledge sharing, and collaboration (Basten & Haamann, 2018). A strong OLC fosters an environment where public sector employees feel empowered to adapt to changing contexts, learn from experiences, and innovate. Studies have shown a positive correlation between a robust OLC and improved employee engagement, enhanced problem-solving abilities, and increased overall organizational performance (Brix, 2019; Kim, 2021).

However, existing research on OLC and performance often focuses on private sector organizations (Kanten et al., 2015). The public sector, with its unique bureaucratic structures, risk aversion, and

political pressures, presents distinct challenges for cultivating an OLC (Arrington & Dwyer, 2018). In Greece specifically, the Public Employment Service (PES) landscape has undergone significant reforms in recent years, including a focus on streamlining services, strengthening job placement assistance, embracing digitalization efforts and employing Artificial Intelligence (AI) to enhance their services (OECD, 2024). These reforms necessitate a more adaptable and skilled workforce within PES to effectively serve the evolving needs of job seekers and employers. Further exploration is needed to understand how OLC dimensions, such as dialogue and inquiry, team learning, and embedded systems, can be effectively implemented and influence adaptive performance within the public sector workforce.

The Marsick and Watkins (2003) dimensions of the Learning Organization Questionnaire (DLOQ) provides a framework to assess OLC. This instrument can be used to explore how OLC dimensions interact with generational differences to influence adaptive performance within the public sector. For example, the team learning and collaboration (TLC) dimension might be particularly important for fostering knowledge sharing and collaboration across generations. Similarly, the dialogue and inquiry (DI) dimension might be crucial for creating a safe space for open communication and feedback exchange between generations with varying learning styles. A study carried by Chen (2021) investigated the effectiveness of using an inquiry-based teaching module to improve workplace communication competence and collaborative mindset in an educational setting. Through academia-industry cooperation, field trips, reflective writing, and project-based presentations, the study revealed positive outcomes, enhancing students' engagement and fostering critical thinking, collaboration, and communication skills. McLay, Thomasse and Reyes' (2023) paper explored the challenges of preparing first-year preservice teachers for the complexities of the twenty-first century through active learning approaches in an educational technology course. The authors discuss the tensions faced in implementing these approaches and how they overcame these challenges by employing Bakhtinian precepts through reflexive inquiry, showcasing how the use of reflexive inquiry and dialogue helped make sense of discomfort, ultimately leading to a revitalized teaching work practice. Shives' (2020) study explored the link between an organization's focus on learning and its employees' commitment within a public sector IT agency. The findings suggest that a strong learning culture can foster a more emotionally connected and dedicated workforce. Malik and Garg (2017) investigated the relationship between learning culture, inquiry and dialogue, knowledge sharing structure, and affective commitment to change, as well as the mediating effect of employee resilience. The findings reveal a significant relationship between the study variables, with employee resilience partially mediating the relationship between learning culture, inquiry and dialogue, knowledge sharing structure, and affective commitment to change.

Given that these studies examine the broader aspects of organizational learning culture and its impact on performance and skills, mainly in the private sector and sporadically in public educational settings, but do not explicitly record the specific relationships between dialogue, inquiry (sharing, asking, advising, giving feedback, building trust), team learning, collaboration (goal adaptation, collective thinking, teamwork), and their impact on interpersonal adaptability (cooperation, empathy, understanding) within diverse generational groups, it is evident that there is a research gap in the current literature. Therefore, we formulate the following research hypotheses:

- **H1:** Dialogue and Inquiry (DI) positively influence Interpersonal Adaptability (IA).
- **H2:** Team learning and Collaboration (TLC) positively influence Interpersonal Adaptability (IA).

Adaptive performance (AP) refers to an employee's ability to adjust behaviours, skills, and attitudes to meet the demands of a changing public sector environment (Ali et al., 2020). It encompasses the capacity to learn from experiences, navigate uncertainties, and creatively address challenges. Adaptive performance is vital for public sector organizations to remain responsive and effective (Charbonnier-Voirin & Roussel, 2012; Gorostiaga et al., 2022; Kanten et al., 2015; Kim, 2021; Park et al., 2020). The

Adaptive Performance Scale (APS) (Charbonnier-Voirin & Roussel, 2012) is utilized to measure adaptive abilities of individuals and teams. This study specifically focuses on interpersonal adaptability (IA) and training and learning effort (TE) within the APS framework. Interpersonal adaptability (IA) is critical for effective collaboration and knowledge sharing, essential aspects of a strong OLC. Interpreting how generational differences influence IA within the public sector workforce is crucial. Training and learning effort (TE) reflects an employee's proactive approach to skill and knowledge development, aligning well with the continuous learning orientation emphasized by a strong OLC. However, generational differences might influence, for instance, how employees approach TE within the context of an OLC. Millennials, known for their tech-savviness and desire for continuous learning (Arrington & Dwyer, 2018), may readily engage with online learning platforms and readily available training materials fostered by an OLC with strong embedded systems (ES). Generation Z, characterized by their independent learning styles (Viterouli et al., 2023b), might require personalized learning approaches within an OLC to maximize their TE. Conversely, Baby Boomers, who may prefer coaching-style feedback (Al-Asfour & Lettau, 2014), might require tailored interventions within an OLC to encourage them to embrace the self-directed learning opportunities promoted by TE or supported by ES.

In alignment, the establishment of a strategic framework involves the creation of embedded systems that generates and modifies knowledge, expertise, skills, and capabilities of the workforce (Alonazi, 2021; Lombard, 2019; Belias et al., 2023). A learning culture within an organization fosters an atmosphere that not only encourages but prioritizes continuous individual and collective learning. The positive relationship between workplace learning and organizational performance within the Dutch hospitality industry was investigated by Kleefstra, Altan, and Stoffers (2020). Arwab, et al. (2022) focused on assessing how training and development impact employee performance in the Indian travel and tourism sector. The relationship between knowledge transfer (KT), organizational performance, and business processes was also explored by Lombard (2019). Kanten et al. (2015) investigated the impact of organizational structures, specifically organic and mechanistic structures, along with the influence of a learning organization, on job embeddedness and individual adaptive performance among hotel establishment employees. The findings revealed that the mechanistic structure positively affected job embeddedness, and both organizational structures indirectly impacted job embeddedness and individual adaptive performance through the mediating role of a learning organization.

While the private sector demonstrates a link between continuous learning and employee effort in acquiring skills (training, seeking innovation, preparing for change), embedded systems to support this effort are scarce (e.g., measuring performance gaps, training outcomes, sharing lessons learned). This lack is further highlighted by research like Goula et al. (2021) which found that Greek public hospital employees felt their learning culture hindered good patient care due to a lack of support for ongoing learning. This underscores the need for more research within the public sector, specifically focusing on variables and aspects that might influence different public organizations and generational cohorts. Thus, the researchers propose the following hypotheses:

- **H3:** Continuous Learning (CL) positively influences Training and Learning Effort (TE).
- **H4:** Embedded Systems (ES) positively influence Training and Learning Effort (TE).

Exploring these generational nuances is crucial for designing effective OLC practices that optimize AP across a multigenerational public sector workforce. There are three key reasons why further exploration of OLC and its impact on adaptive performance is particularly important for Public Employment Services (PES) compared to other public entities or the private sector (Gazier, 2020; OECD, 2024). PES caters to a diverse range of job seekers and employers, each with evolving needs. Adaptability is crucial for PES staff to effectively connect these two groups in a dynamic labor market. For instance, a PES officer might need to adjust their communication style and approach depending on

whether they are working with a recent graduate or an experienced professional seeking a career change. The private sector may have a more homogenous customer base, while other public entities might not have such a direct client interaction element. The PES landscape in Greece, as highlighted, has undergone significant recent reforms. This necessitates a workforce that can adapt to new procedures, technologies, and service delivery models. While some public entities may also experience reforms, the pace and focus on streamlining services within PES creates a unique need for adaptability. The private sector, while facing its own changes, has more flexibility in adapting due to less bureaucratic structures. Lastly, PES acts as a bridge between the public sector and the private sector. Their effectiveness hinges on comprehending and defining the needs of both job seekers and employers. A strong OLC can foster this understanding by encouraging collaboration, knowledge exchange, and continuous learning. This specific bridge function is less prominent in other public entities and not a core function of the private sector.

Therefore, while prior research explores the value of OLC for fostering knowledge exchange and adaptability in diverse environments (Jain & Maheshwari, 2020; Sprinkle & Uric, 2018), it often fails to account for the specific generational dynamics of a multigenerational workforce, a key feature of PES. Kim's research (2021) introduced adaptive performance as an organizational dimension and examined its dynamics with the dimensions of a learning organization. The findings demonstrated that perceived knowledge and adaptive performance mediated the positive relationship between a learning organization and perceived financial performance, emphasizing the potential impact of learning and organizational development activities on intangible performance. However, no generational disparity was referred to. On the other hand, Arrington and Dwyer's study (2018) explored the correlation between generational cohorts and perceptions of managerial effectiveness in the U.S. federal public service. The results revealed consistently high ratings of managerial effectiveness across all generations and managerial levels, with Generation Xers and Millennials showing a statistically significant relationship. Nevertheless, their analysis was limited to managers, not the workforce as a whole. Jain and Maheshwari's qualitative research (2020) investigated the impact of generational diversity on organizational learning in Indian IT companies, focusing on the distinctive traits, learning preferences, and dynamics of intergenerational learning among Baby Boomers, Generation X, and Millennials. Their study indicated how these different cohorts contribute to the organizational learning environment, fostering knowledge exchange and innovation. The insights unveiled the significance of leveraging generational diversity to enhance learning and adaptability within organizations, contributing to their resilience and competitiveness in dynamic environments. Yet, their study was limited to three generations and not quantitative, thus generating limited generalizability and potential subjectivity and bias. Sprinkle and Uric's (2018) paper addressed the topic of intergenerational learning in the workplace, emphasizing the importance of targeted socialization, adapting to new preferences and trends in development programs, and leveraging multiple approaches to enhance learning outcomes, but without any explicit association to adaptive performance.

The existing lack of research on OLC and its impact on adaptive performance within a public sector's multigenerational workforce creates a significant gap. This study aims to address this gap by investigating how OLC practices can be effectively implemented to cultivate a more adaptable and effective workforce within PES. The unique context of PES, characterized by its diverse clientele, rapid reforms, and bridging function, necessitates further exploration and justifies our final proposed hypothesis.

- **H5:** Organizational Learning Culture (OLC) positively influences the Organization's Performance (OP).

2.1 Theoretical framework

The examination of generational differences in learning preferences is situated within the framework

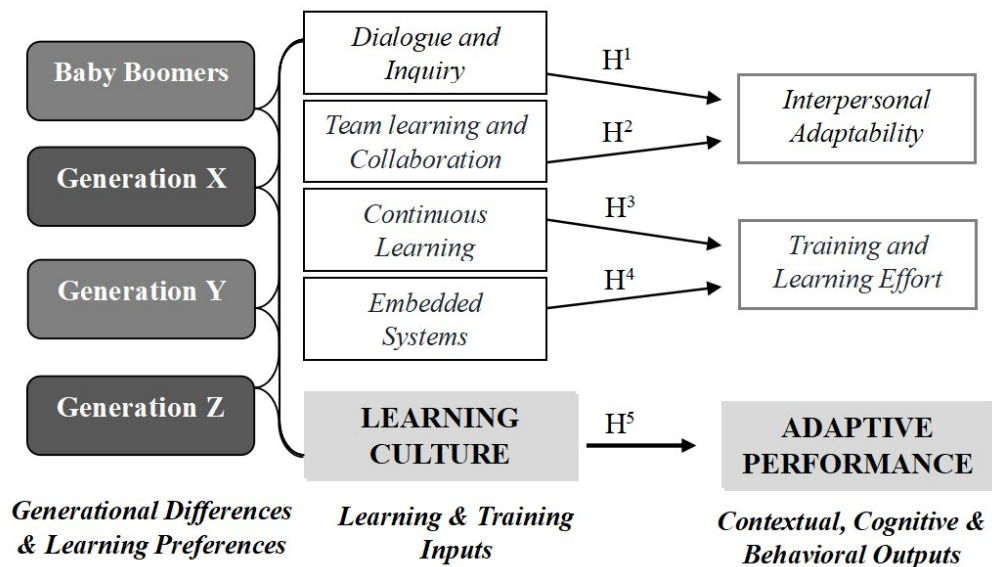


Figure 1 Conceptual model

of tracing how distinct generational cohorts react to learning and practice skill development. The theory acknowledges that different generations have varying preferences for learning methodologies, communication styles, and technology adoption (Bonfield et al., 2020; Kantén et al., 2015). This framework depicts the impact of the learning culture on performance (context, cognition, and behaviour) separately for each generation, forming a two-stage research approach.

3. Materials and methods

3.1 Tools and data collection

This research study involves collecting and analysing numerical data; hence, a quantitative method was implemented to address the research hypotheses (Marshall, 1996; Creswell, 2009), drawing on the questionnaire method since it matched to our criterion of fitness for purpose (Wilson & McLean, 1994). Two measurement instruments were used to study the relationship between two variables with respect to age differences.

To measure and assess the organizational learning culture the shorter version of the Dimensions of the Learning Organization Questionnaire (DLOQ) was used, refined by Yang, Watkins, and Marsick (2004), instead of the original structure of the 43 items (Marsick & Watkins, 2003). Their instrument measures seven dimensions and included 21 items: 1. Continuous Learning (CL-3 items) involves work that is structured to allow employees to learn on the job, and diagnose chances for continuous education; 2. Dialogue and Inquiry (DI-3 items) allows for questioning, opinions and feedback sharing; 3. Team Learning and Collaboration (TLC-3 items) entails welcoming and rewarding cooperation and group work; 4. Embedded systems (ES-3 items) help develop and maintain both high- and low-technology mechanisms that share learning and integrate it with work; 5. Empowerment (EMP-3 items) assesses people's involvement in creation, ownership, and implementation of a shared vision; 6. Systems Connections (SC-3 items) evaluate how individuals are assisted in utilizing information to alter work practices and general impact; 7. Strategic Leadership (SL-3 items) examines the leaders' models and their support towards employees' learning and advancement for strategic business results.

For the measurement of organisational performance, the Adaptive Performance Scale was utilised (Charbonnier-Voirin & Roussel, 2012) consisting of five factors and 19 items: 1. Creativity (CR-4

items) indicates employees' capacity to solve complicated challenges; 2. Reactivity in the Face of Emergencies or Unexpected Circumstances (RE-4 items) involves the capacity to manage priorities and adjust to unexpected work conditions; 3. Interpersonal Adaptability (IA-4 items) refers to an employee's ability to modify their behaviour to collaborate well with others; 4. Training and Learning Effort (TE-4 items) shows employees' tendency to start action to improve personal growth; 5. Handling Work Stress (HWS-3 items) refers to an individual's capacity to remain calm and channel tensions.

A 5-point Likert scale, ranging from 1= never to 5 = always, was adopted for both questionnaires. This scale was chosen for its cultural and contextual suitability, ensuring clarity and consistency for Greek respondents and minimizing potential confusion (Bouranta, Chitiris, & Paravantis, 2009). To enhance cultural appropriateness, written approval and permission for developing a Greek version were obtained from the creators of the instruments. Following recommended guidelines by Kristjansson, Desrochers, and Zumbo (2003), the translation and adaptation process involved verifying the relevance of the focal concept, translating the instrument, conducting a peer review with back translation, pre-testing for refinement, and finally, testing the instrument for reliability, validity, and acceptability in the new language. The translation aimed to capture the conceptual, experiential, and semantic meanings of items, aligning them with cultural interpretation and norms established through sample respondent feedback (Kalfoss, 2019). Additionally, approval for access to the organisation's internal network and data collection from the Public Employment Services (PESs) was granted by the Governor of the Manpower Employment Organization (DYPA in Greek).

3.2 Population and sampling

This study adopted a purposive sample, specifically utilizing convenience sampling from the online database of DYPA, accessible only via the internal network (intranet), to identify and engage the most accessible and suitable individuals for participation in the survey. Given the absence of a necessity to generalize to the wider population, opportunity sampling was deemed the most appropriate and efficient means, considering both time and cost. The sample collected socio-demographic data comprising gender, age, marital status, educational background, regional directorates of the PES, employment type, current position held, work experience both in the current position and in the organization. Eight hundred e-questionnaires hosted on Google Forms were distributed via email directly to the employees' electronic addresses through the internal network of the PESs nationwide, encompassing a diverse range of professionals irrespective of their gender, educational level, position, or years of experience. The data collection period spanned from November 1st to December 20th, 2022. A total of 238 e-questionnaires were returned (about a 30% response rate), each with complete responses, as the completion of each question was mandatory for the submission of the questionnaire.

Notably, the sample encompassed four active generations presently employed at the PESs: Generation Z (21–30 year-olds) constituted 16 employees, representing 6.72% of the total sample; Generation Y (31–40) encompassed nearly a quarter of the population, accounting for 21.01% (n=50); Generation X (41–55) predominated with an overall percentage of 59.66% (n=142); and Baby Boomers (56–77) represented a modest 12.61% of the targeted population (n=30). The limited representation of Baby Boomers could be attributed to the retirement age in Greece, set at 67, prompting many in this group to opt for retirement at the earliest opportunity, despite potentially minimal retirement compensation. In contrast, the challenges faced by the youngest generation (Generation Z) in securing employment in the public sector may largely be attributed to the increasing requirements in terms of credentials, skills, degrees, and diplomas, resulting in time delays in their employability within this sector.

4. Findings

A structural equation modelling technique through R 4.2.1 software environment (lavaan 0.6.14 for

the models and lavaanPlot 0.6.2 library for the graphs) for statistical computing and graphics was used for data analysis through a two-stage method (Anderson & Gerbing, 1988; Hair et al., 2022). The first stage involved the examination of the appropriateness of the measurement model, i.e., analysis of the collected data from a validity and reliability standpoint. Once data were checked, the second stage involved assessment of the hypotheses.

4.1 Validity and reliability

The models were estimated using the MLR (maximum likelihood with robust standard errors) estimator, known as Huber – White SE, recognized for its robustness in handling data errors and perturbations (Huber, 1967; White, 1982; Bertsimas & Nohadani, 2019). Following the methodology of studies like Gorostiaga et al. (2022), Sultana (2020), and Park et al. (2020) for the Adaptive Performance Scale, and Song, Joo, & Chermack (2009), Leufvén et al. (2015), and Chai & Dirani (2018) for DLOQ, this research heavily relied on Confirmatory Factor Analysis (CFA) to assess construct validity. Descriptive statistics, correlations, and reliabilities (Cronbach's alpha) were reported, following Hinkin's recommendations (2005). Additionally, goodness-of-fit evaluation used both absolute (e.g., chi-square) and incremental (e.g., RMSEA, Steiger, 1990; SRMR, CFI, Bentler,

Table 1 Final model: Cronbach's alpha, factor loadings & descriptive statistics

<i>Factor</i>	<i>Item</i>	<i>α</i>	<i>λ</i>	<i>M</i>	<i>SD</i>
Creativity (CR)	Q17. I use a variety of sources/types of information to come up with an innovative solution.		0.722		
	Q18. I develop new tools and methods to resolve new problems.	0.72	0.882	3.50	0.70
	Q19. Within my department, people rely on me to suggest new solutions.		0.479		
Reactivity in the face of Emergencies (RE)	Q10. I am able to achieve total focus on the situation to act quickly.		0.831		
	Q11. I analyze possible solutions and their ramifications quickly to select the most appropriate one.		0.866		
	Q12. I quickly decide on the actions to take to resolve the problem.	0.84		4.00	0.56
	Q20. I easily reorganize my work to adapt to the new circumstances.		0.759		
Interpersonal Adaptability (IA)	Q25. Developing good relationships with all my counterparts is an important factor of my effectiveness.		0.737		
	Q26. I try to understand the viewpoints of my counterparts to improve my interaction with them.	0.72	0.857	4.20	0.57
	Q14. I look for solutions by having a calm discussion with colleagues.		0.497		
Training and Learning Effort (TE)	Q21. I am on the lookout for the latest innovations in my job to improve the way I work.		0.579		
	Q22. I undergo training on a regular basis at or outside of work to keep my competencies up to date.		0.656		
	Q23. I prepare for change by participating in every project or assignment that enables me to do so.	0.79		3.70	0.67
	Q24. I look for every opportunity that enables me to improve my performance.		0.803		
			0.751		

Codified as: α : Cronbach's alpha; λ : Item Factor Loading; M : Factor Mean; SD : Factor Standard Deviation.

1990; TLI, Tucker & Lewis, 1973) fit indices, with specified cut-off criteria for comprehensive model fit assessment. Measurement invariance analysis was conducted to ensure accurate latent construct measurement across different subgroups, ensuring valid intergroup comparisons (Schmitt & Kuljanin,

2008; Panayiotou et al., 2023).

4.1.1 Adaptive performance scale

In their research, Charbonnier-Voirin and Roussel (2012) crafted a well-constructed model that exhibited strong psychometric properties, successfully validating the overall scale through the assessment of discriminant, convergent, and nomological network validity. In our study, we critically evaluated this model within the context of our sample and cultural milieu. Our assessment encompassed concurrent and content validity, reliability, and construct validity, following a methodological framework previously established. The original model comprised a 5-factor structure incorporating a total of 19 questions. However, specific parameters of the model approached borderline values, revealing inadequate fit indices ($\chi^2=333.112$, $df=142$, $\chi^2/df=2.346$, CFI= 0.883, TLI= 0.859, RMSEA= 0.075, SRMR= 0.073). Additionally, the fifth dimension (Handling Work Stress) exhibited a low Cronbach's Alpha value ($\alpha=0.53$), and certain items demonstrated low factor loadings (<0.4), prompting a decision to introduce modifications and adjustments to the model. These adjustments were implemented to bolster the statistical robustness of the findings and to realize an improved and robust revised model.

Therefore, after deliberation, it was determined that the fifth factor (dimension) (HWS) should be eliminated, leading to the formulation and evaluation of a revised 4-factor model. Notably, while the factor consisting of three specific questions was removed, one of the questions (Q14) was retained owing to its satisfactory loading, and integrated in the Interpersonal Adaptability factor due to its relevance to the content and essential characteristics of the specific factor. This decision was based on the statistical analyses and theoretical considerations involving the remaining dimensions mentioned. Furthermore, the exclusion of questions 27 ("I learn new ways to do my job in order to collaborate better with others") and 28 ("I willingly adapt my behaviour whenever I need to in order to work well with others") from the 3rd Dimension (IA) was warranted due to their low factor loadings. Similarly, question 16R ("I do not hesitate to go against established ideas to propose an innovative solution") was discarded from the 1st Dimension (CR) due to its high residual variance (0.988).

Subsequently, a refined model comprising 4 factors and 14 questions was devised, demonstrating a highly favourable fit ($\chi^2=147.574$, $df=71$, CFI= 0.940, TLI= 0.923, RMSEA= 0.067, SRMR= 0.07). The final model exhibited standard deviations below one for each factor, improved factor loadings, and robust Cronbach's alpha values (Table 1). Ultimately, as Charbonnier-Voirin and Roussel (2012, p. 290) assert, "regardless of the exact nature of the factorial components, this scale sets the stage for advances in research concerning the antecedents and consequences of adaptive performance."

4.1.2 Dimensions of the learning organization questionnaire

The Dimensions of the Learning Organization Questionnaire (DLOQ), introduced by Marsick and Watkins (2003), has been widely implemented in diverse cultural and contextual settings, consistently demonstrating robust validity and reliability. Comprising a total of 21 items, the shorter version of the DLOQ's measurement model encompasses seven dimensions, offering a comprehensive assessment of the learning organization culture's essence and context. Examination of the factor loadings for each item of the DLOQ across the seven dimensions (refer to Table 2) reveals that all loadings surpass 0.5, falling within the range of acceptable (0.4-0.7) to satisfactory (>0.7) levels. Furthermore, all Cronbach's alphas surpass 0.8, indicating robust internal consistency across the board, with the exception of the CL factor ($\alpha=0.64$), which is, though, considered acceptable.

The initial confirmatory factor analysis (CFA) of the original measurement model revealed a moderate-to-good fit ($\chi^2=704.551$, $df=182$, CFI= 0.840, TLI= 0.815, RMSEA= 0.110, SRMR= 0.092). Hence, deliberate steps were taken to address the moderate outcomes concerning the CL factor and the overall model fit. Consequently, the CL factor was eliminated, along with the exclusion of questions Q37 and Q40 from the TLC and SL factors, respectively, due to their low factor loadings. The revised

model, consisting of 6 factors and 16 questions, produced the following measurement indices: $\chi^2=327.687$, $df=98$, $CFI=0.906$, $TLI=0.885$, $RMSEA=0.099$, $SRMR=0.088$. Despite these adjustments, the indicators exhibited consistent levels, and no significant deviations were observed in the TLI and RMSEA, leading us to retain the initial model, since in accordance with Marsick and Watkins' contention that "it is the overall profile or pattern of responses that provides the best picture, and all dimensions are important" (2003, p. 139). Therefore, modifications such as the removal of specific items within a dimension could potentially compromise its reliability, a perspective discouraged by the creators. Hence to preserve the original structure of the DLOQ, the model configuration was maintained along with its complete set of elements, i.e., factors and questions.

Table 2 Internal consistency of the model items

<i>Factor</i>	<i>Item</i>	<i>α</i>	<i>λ</i>	<i>M</i>	<i>SD</i>
Continuous learnin (CL)	Q29. *, people help each other learn.		0.563		
	Q30. *, people are given time to support learning.	0.64	0.678	2.80	0.71
	Q31. *, people are rewarded for learning.		0.598		
Dialogue & inquiry (DI)	Q32. *, people give open and honest feedback to each other.		0.816		
	Q33. *, whenever people state their view, they also ask what others think.	0.83	0.781	3.00	0.79
	Q34. *, people spend time building trust with each other.		0.745		
Team learning & collaboration (TLC)	Q35. *, teams/groups have the freedom to adapt their goals as needed.		0.846		
	Q36. *, teams/groups revise their thinking as a result of group discussions or information collected.	0.83	0.853	2.60	0.80
	Q37. *, teams/groups are confident that the organization will act on their recommendations.		0.678		
Embedded systems (ES)	Q41. ** creates systems to measure gaps between current and expected performance.		0.775		
	Q42. ** makes its lessons learned available to all employees.	0.86	0.881	2.70	0.86
	Q43. ** measures the results of the time and resources spent on training.		0.810		
Empowerment (EMP)	Q44. ** recognizes people for taking initiatives.		0.825		
	Q45. ** gives people control over the resources they need to accomplish their work.	0.84	0.772	2.40	0.84
	Q46. ** supports employees who take calculated risks.		0.798		
Systems connections (SC)	Q47. ** encourages people to think from a global perspective.		0.850		
	Q48. ** works together with the outside community to meet mutual needs.	0.86	0.768	2.50	0.87
	Q49. ** encourages people to get answers from across the organization when solving problems.		0.841		
Strategic Leadership (SL)	Q38. *, leaders mentor and coach those they lead.		0.815		
	Q39. *, leaders continually look for opportunities to learn.	0.86	0.853	2.70	0.92
	Q40. *, leaders ensure that the organization's actions are consistent with its values.		0.804		

Codified as: α : Cronbach's alpha; λ : Factor Loading; M : Factor Mean; SD : Factor Standard Deviation. Key: *In my organization, **My organization.

4.1.3 Invariance testing

To ensure valid group comparisons, researchers must establish measurement invariance (MI), ensuring the consistent interpretation of latent constructs across diverse groups. The four-step procedure for multigroup MI involves (a) investigating baseline models, (b) assessing the configural model with varied loadings and intercepts, (c) comparing the configural model with the metric model assuming equal loadings, and (d) comparing the metric model with the scalar model assuming equal loadings and intercepts.

In evaluating metric invariance for both questionnaires, the χ^2 difference test yielded non-significant results ($p=0.2216$ & $p=0.5921$), indicating satisfactory metric invariance and consistent relationships

between latent constructs and indicators across various age groups. Similarly, for scalar invariance, the χ^2 difference test did not produce significant results ($p=0.1432$ & $p=0.3147$), signifying fulfilment of scalar invariance, where relationships, item intercepts, and factor loadings remain uniform across age groups. However, strict invariance testing resulted in a highly significant difference ($p < 0.001$ & $p=0.0131$), suggesting the absence of strict invariance regarding equal residual variances, intercepts, and factor loadings across age groups. However, the primary focus was on ensuring consistent measurement of latent constructs in terms of intercepts across diverse groups. It is crucial to acknowledge the limitations tied to sample size, as larger samples could enhance result robustness. Considering model fit, χ^2 difference tests, while commonly used, may be sensitive to sample size, potentially yielding significant differences even in the presence of practical invariance.

Table 3 Adaptive performance questionnaire

Age Groups	<i>n</i>	χ^2	df	CFI	TLI	RMSEA	SRMR
Total	238	147,574	71	0,940	0,923	0,067	0,070
Generation Z	16	119,563	71	0,862	0,845	0,095	0,096
Generation Y	50	118,123	71	0,866	0,828	0,092	0,084
Generation X	142	125,504	71	0,929	0,909	0,074	0,078
Baby Boomers	30	123,586	71	0,911	0,896	0,079	0,080
Invariance		χ^2	df	χ^2 difference	df difference	<i>p</i> -value	
Configural		190,80	284				
Metric		369,36	326	178,564	42	0,2216	
Scalar		407,23	356	37,868	30	0,1432	
Strict		529,14	398	121,910	42	<0,001	

Table 4 Dimensions of the learning organization questionnaire

Age Groups	<i>n</i>	χ^2	df	CFI	TLI	RMSEA	SRMR
Total	238	704,551	182	0,840	0,815	0,110	0,092
Generation Z	16	414,311	182	0,747	0,708	0,139	0,117
Generation Y	50	606,649	182	0,820	0,795	0,110	0,098
Generation X	142	520,388	182	0,831	0,805	0,114	0,099
Baby Boomers	30	402,102	182	0,736	0,721	0,126	0,119
Invariance		χ^2	df	χ^2 difference	df difference	<i>p</i> -value	
Configural		1.943,50	728				
Metric		2.003,20	791	59,771	63	0,5921	
Scalar		2.045,90	830	42,711	39	0,3147	
Strict		2.121,60	893	75,652	63	0,0131	

4.2 Hypotheses testing

4.2.1 Simple linear models

To investigate Hypotheses 1[Dialogue and Inquiry (DI) positively influence Interpersonal Adaptability (IA)] and 2[Team learning and Collaboration (TLC) positively influence Interpersonal Adaptability (IA)], we conducted multiple linear regression analyses using age-segregated data, focusing on the influence of Dialogue and Inquiry (DI) and Team Learning and Collaboration (TLC) on Interpersonal Adaptability (IA) workplace setting. Notably, IA within the Y Generation exhibited a significant positive correlation with Dialogue and Inquiry ($b=0.399$, $p < 0.001$) and Team Learning and Collaboration ($b=0.263$, $p < 0.001$). Additionally, it showed a low significant association with DI ($b=0.166$, $p < 0.01$) and TLC ($b=0.123$, $p < 0.01$) within the X Generation. The significance of these differences is underscored by lower *p*-values. Thus, the hypotheses H1 and H2 are accepted for Generations X and Y, but rejected for Generation Z and Baby Boomers, since the results indicated a

lack of statistical significance, likely attributable to the sample size. The findings are in line with Chen's (2021) study who suggests that employing inquiry-based learning methods positively influences the enhancement of participants' involvement and practical cognitive skills, including adaptability, critical thinking, teamwork, and communication.

Concerning Hypotheses 3[Continuous Learning (CL) positively influences Training and Learning Effort (TE)] and 4[Embedded Systems (ES) positively influence Training and Learning Effort (TE)], albeit the results were relatively modest, they remained consistent. Training and Learning Effort (TLE) the employees put in learning endeavours in both the Y ($b = 0.183$, $p < 0.01$) and X ($b = 0.119$, $p < 0.01$) Generations exhibited marginal and positive associations with Continuous Learning (CL). Moreover, the TLE of the Y Generation displayed a low positive association with Embedded Systems (ES) that facilitate this effort ($b = 0.128$, $p < 0.01$) and a significant positive association was observed for the X Generation ($b = 0.169$, $p < 0.001$). Previous research affirms that learning positively and directly affects both embeddedness and individual adaptive performance (Kanten, Kanten & Gurlek, 2015). Therefore, the hypotheses H3 and H4 are supported exclusively for the two predominant age cohorts (p values), X and Y, but, similarly to H1 and H2, rejected for the Generation Z and Baby Boomers, where particular consideration should be placed.

Table 5 Simple linear models by age groups (Hypotheses 1 - 4)

		H ¹	H ²	H ³	H ⁴
Response Variable:		IA		TE	
Predictor Variable:		DI	TLC	CL	ES
Total (N = 238)	b	0.209***	0.156***	0.121***	0.125***
	R ²	9.3%	6%	7.1%	7.1%
Baby Boomers (n = 30)	b	0.086	0.106	0.115	0.087
	R ²	1.4%	4.2%	8.1%	3.5%
Generation X (n = 142)	b	0.166**	0.123**	0.119**	0.128***
	R ²	6.2%	3.3%	7.4%	7.8%
Generation Y (n = 50)	b	0.399***	0.263***	0.183**	0.169**
	R ²	33.3%	18.9%	10.4%	10.2%
Generation Z (n = 16)	b	0.187	0.185	0.068	0.116
	R ²	6.6%	9.5%	3.2%	9.2%

Codified as: *b*: regression coefficient; *R*²: coefficient of determination

Key: * *p* value < 0.10; * *p* value < 0.05; ** *p* value < 0.01; *** *p* value < 0.001

4.2.2 Multiple regression models

Our 5th hypothesis proposed that Organizational Learning Culture (OLC) has a positive influence on Organization Performance (OP). To examine this hypothesis, we conducted multiple regression analyses for different generational groups. The Akaike Information Criterion (AIC) was used to select the best fitting model for each group. For Generation Z and Baby Boomers, the results did not support the hypothesis. In both cases, the F statistic for all the models tested was not statistically significant. This means that, based on our data, there is no evidence of a statistically meaningful relationship between Organizational Learning Culture and Organization Performance for these generations. Specifically, the F statistics for all four models (CR, RE, IA, TE) concerning Generation Z have p-values above 0.05. This indicates a lack of statistically significant effect of OLC on OP for Generation Z. For Baby Boomers, while the F statistic for the RE model (p-value = 0.050) is marginally significant, the other models (CR, IA, TE) have non-significant p-values. Given the overall lack of consistency across models, we cannot conclude a statistically significant relationship between OLC and OP for Baby Boomers. Therefore the 5th hypothesis for these two generations is not accepted.

In the context of the X category the 5th hypothesis is partially accepted. This means that while one

dimension of OLC has a significant positive influence on certain aspects of Adaptive Performance, there are also non-significant or negative relationships observed for other dimensions. All four models demonstrated statistically significant outcomes, with F and p-value statistics recording as 2.936 and 0.007, 3.944 and <0.001, 2.859 and 0.008, and 4.678 and <0.001, respectively. The coefficient of determination (R²) ranged from 12.3% to 19.6%, indicating that the predictor variables from Organizational Learning Culture accounted for a modest proportion of the variance in Adaptive Performance variables. Nevertheless, only three dimensions of OLC deemed statistically significant: EMP, SC & SL. The statistically significant determinants, EMP & SL, exhibited an inverse relationship with the dimensions of Organizational Performance. Thus, since the direction of this influence is opposite to what was hypothesized, it cannot be accepted (Kim, 2021). Similar hypotheses rejections are seen in previous research by Akhtar et al. (2011), regardless of generational discrepancies, who claimed that the primary reason for rejecting their hypotheses was that most respondents lacked the necessary experience and education level to feel empowered to make decisions. The only predictor variable that has a positive influence on all four response variables is System Connections (SC), that is why hypothesis 5 can only be partially accepted. Akhtar's et al. (2011) findings, too, indicate that system connection significantly influences organizational performance, suggesting that employees are proficient in understanding and connecting both the internal and external environments that affect them.

Table 6 Multiple linear regression model for hypothesis 5 - Generation X

Predictor Variables – Organisational Learning Culture		Response Variable – Adaptive Performance			
		Creativity (CR)	Reactivity in the face of Emergencies (RE)	Interpersonal Adaptability (IA)	Training and Learning Effort (TE)
Continuous learning (CL)	b ₁	0.188	0.035	0.095	0.173
Dialogue & inquiry (DI)	b ₂	-0.041	0.093	0.134	-0.066
Team learning & collaboration (TLC)	b ₃	0.012	0.091	-0.003	0.124
Embedded systems (ES)	b ₄	-0.034	-0.052	-0.152	0.089
Empowerment (EMP)	b ₅	-0.243**	-0.165 *	-0.214*	-0.297
Systems connections (SC)	b ₆	0.223**	0.264***	0.239 *	0.168*
Strategic Leadership (SL)	b ₇	-0.173**	-0.218**	-0.027	-0.169*
	F	2.936 *	3.944***	2.859 *	4.678***
	R ²	13.3%	17.1%	12.3%	19.6%

Codified as: b₁ to b₇: regression coefficients; F: F statistic; R²: coefficient of determination. Key: * p value < 0.10; * p value < 0.05; ** p value < 0.01; *** p value < 0.001

In the Y generational cohort, all the formulated models encompass a greater share of the observed variance in comparison to those tailored for the mentioned age group, with the R² almost doubling. Similarly to Gen X, there are also statistically significant relationships in generation Y, but only between specific independent and dependent variables. More precisely, Empowerment (EMP), Systems Connections (SC) and Strategic Leadership (SL) have negative (statistically significant) relationships with Reactivity in the face of Emergencies (RE), Training and Learning Effort (TE) and Interpersonal Adaptability (IA) respectively. Notably, the observed negative associations, as delineated in Tables 6 and 7, give rise to uncertainties and stimulate inquiries. However, there are positive relationships between Continuous Learning (CL) and Training and Learning Effort (TE), Continuous Learning (CL) and Embedded Systems (ES), and Dialogue & inquiry (DI) and Interpersonal Adaptability (IA) variables. Therefore, on the same token, hypothesis 5 is partially accepted for the Y generation. The positive effect of organisational learning on adaptive performance was also supported by Birasnav,

Chaudhary and Scillitoe (2019) who claimed that enhanced learning capacity transforms organizations into adaptable systems that can swiftly address customer needs, leading to elevated performance levels.

Table 7 Multiple linear regression model for hypothesis 5 - Generation Y

<i>Predictor Variables –</i> Organisational Learning Culture		<i>Response Variable – Adaptive Performance</i>			
		Creativity (CR)	Reactivity in the face of Emergencies (RE)	Interpersonal Adaptability (IA)	Training and Learning Effort (TE)
Continuous learning (CL)	b ₁	0.325	0.230	0.349	0.627*
Dialogue & inquiry (DI)	b ₂	0.074	0.271	0.314 *	-0.308
Team learning & collaboration (TLC)	b ₃	0.185	-0.009	0.044	0.130
Embedded systems (ES)	b ₄	0.230	0.127	-0.047	0.324 *
Empowerment (EMP)	b ₅	-0.311	-0.361 *	-0.094	-0.192
Systems connections (SC)	b ₆	-0.304	-0.102	-0.104	-0.458*
Strategic Leadership (SL)	b ₇	-0.208	-0.101	-0.193 *	-0.039
	F	2.528*	1.940 *	4.700**	2.844*
	R ²	29.7%	24.4%	43.9%	32.2%

Codified as: b₁ to b₇: regression coefficients; F: F statistic; R²: coefficient of determination. Key: * p value < 0.10; * p value < 0.05; ** p value < 0.01; *** p value < 0.001

5. Discussion

The primary objective of this research was to investigate the relationship between organizational learning culture and employee adaptive performance within a diverse multigenerational workforce in the public sector. Given the statistically insignificant findings concerning Baby Boomers and Generation Z, the analysis focuses on X and Y Generations.

For both these generations, the data has confirmed that Team Learning and Collaboration (TLC) and Dialogue and Inquiry (DI) positively influence Interpersonal Adaptability (IA). Dialogue and Inquiry can modify Interpersonal Adaptability of the employees by encouraging open communication, active listening, and mutual understanding. It can initiate the exchange of diverse viewpoints in a respectful manner, nurturing empathy, and respect for varying perspectives (Yoo, Truong, & Jung, 2023). Practicing DI can effectively bridge generational gaps, reduce conflicts, and fortify relationships, thereby relating overall adaptability. Similarly, Team Learning and Collaboration are instrumental in promoting Interpersonal Adaptability by projecting shared goals, collective problem-solving, and utilization of team strengths (Babnik & Trunk Širca, 2014). Collaborative efforts that integrate diverse generational perspectives can enable the development of holistic solutions, fostering flexibility, empathy, and effective communication across different age groups.

Similarly, the Training and Learning Effort (TE) of both the X and Y generations is positively influenced by the concepts of Continuous Learning (CL) and Embedded Systems (ES). Continuous Learning is interlinked to the Training and Learning Efforts employees put to acquire new skills, capabilities, and behavioural patterns. Embracing a continuous learning mentality equips employees to adapt to evolving demands. Leaders can foster a growth mindset in their workforce to help them navigate dynamic work environments (Dimock, 2019; Solaja & Ogunola, 2016). Moreover, Embedded Systems are important in facilitating effective Training and Learning Efforts, as they enable the practical application of theoretical knowledge, since they make lessons learned available to all employees (Hailekiros & Renyong, 2016). Embedded systems help measure performance gaps, and

training time and resources outcomes; they can help employees tackle real-world challenges by providing the means to bridge the gaps and make that feasible.

Overall, it has been supported by the 5th hypothesis that the Organizational Learning Culture significantly influences the Organizational Adaptive Performance of the X and Y generations, albeit with certain instances of negative correlations, which may be attributed to the complexities justifying how different generational cohorts perceive and respond to organizational environments. Negative associations have been observed for Generation X in several key areas. Firstly, the negative correlation between Empowerment and Creativity might be attributed to a potential perception of autonomy and empowerment as conflicting with their desire for stability and work-life balance. Generation X, having experienced job instability and downsizing during their formative years, may prioritize a sense of control and predictability in their work environment (Mulvie, 2021). Hence, they might feel more creative and innovative when they perceive a balanced level of empowerment that aligns with their need for stability. Likewise, generation X's preference for decisive leadership, developed under command-and-control styles during emergencies, might contradict the notion of empowerment (Empowerment and Reactivity in the Face of Emergencies or Unexpected Circumstances). Moreover, their inclination towards structured approaches may conflict with spontaneous expressiveness and creative thinking (Strategic Leadership and Creativity). Similarly, their preference for predefined strategies and predictable communication patterns may hinder flexible interpersonal interactions (Strategic Leadership and Interpersonal Adaptability). Lastly, this generation may prioritize optimizing existing resources over investing in extensive training efforts, leading to a negative correlation between Strategic Leadership and Training and Learning Effort.

Correspondingly, the negative association between Empowerment and Reactivity in the Face of Emergencies or Unexpected Circumstances for Generation Y might be linked to their preference for a more collaborative and participatory work environment. Generation Y are often characterized by their desire for collaboration, open communication, and involvement in decision-making processes. While they appreciate empowerment, an excessive focus on individual empowerment without a corresponding emphasis on collaborative problem-solving may lead to a perceived lack of preparedness when unexpected situations arise (Singh et al., 2023). Generation Y may benefit more in environments that balance empowerment with structured collaboration, allowing for proactive responses to emergencies through collective efforts. Additionally, their inclination towards digital learning might diminish their interest in extensive formal training efforts, perceiving self-directed online resources as effective alternatives (Systems Connections and Training and Learning Effort). Generation Y's high expectations for innovation may contribute to a perception of disconnect when systems and training methods do not align with their preference for cutting-edge and dynamic learning experiences. Moreover, their collaborative nature may lead them to find top-down or authoritarian leadership rigid and unsuited to their adaptive, innovative approach. They might value leaders who prioritize team-based decision-making and open communication (Strategic Leadership and Interpersonal Adaptability). It is important to acknowledge that these interpretations are based on generalized trends. Individual variations within Generation X and Y can significantly influence their perceptions and preferences (Boudlaie et al., 2020) and the negative associations might not be applicable in all contexts.

6. Practical implications

In investigating the relationship between organizational learning culture (OLC) and adaptive performance within a diverse multigenerational workforce, the study focused on Generation X and Y due to statistically insignificant findings for Baby Boomers and Generation Z. The analysis revealed several key insights with practical implications. We found that team learning and collaboration along with dialogue and inquiry positively influence interpersonal adaptability for both Generation X and Y workforce. Organizations' leaders can adopt learning and adaptive strategies tailored to the preferences of Generation X, recognizing their preference for stability and work-life balance. Empowering this

generation with a balanced level of autonomy can improve creativity and innovation (Chen, 2021). For Generation Y, collaborative and participatory leadership approaches are recommended. Leaders can prioritize team-based decision-making and open communication to align with the collaborative nature of this generation. Continuous learning programs can be designed to meet the expectations of both generations (Mohamad et al., 2019). Embracing a growth mindset in training can aid employees in adapting to dynamic work environments. The integration of Embedded Systems in training programs is crucial, providing practical applications of theoretical knowledge. This approach enables managers and employees to bridge the gap between theoretical learning and real-world challenges effectively, as well as the gap between desired and actual performance.

The findings indicated negative associations for Generation X in specific areas. Firstly, the negative correlation between empowerment and creativity indicates a conflict between autonomy and inalterability. Moreover, the study identified a negative correlation between strategic leadership and both training and learning effort and interpersonal adaptability. Generation X's preference for organised processes and foreseeable communication patterns can obstruct the adaptability of interpersonal interactions. Managers need to recognize these preferences and tailor leadership approaches accordingly. This involves maintaining a balance between empowerment and stability, as well as employing decisive leadership during emergencies, aligning with Generation X's predispositions. The development of customized training programs, by offering training on relevant digital tools and platforms to adapt to changing work environments; flexible work arrangements, by providing resources and policies to support, for instance, remote work arrangements; cross-generational mentorship initiatives to facilitate knowledge exchange; career chances, via flexible career paths and skill-based promotions to accommodate diverse aspirations (Singh et al., 2023) can aid towards this direction. Moreover, managers and supervisors can implement regular feedback sessions and recognition programs to boost motivation. They can also create platforms for intergenerational collaboration and idea-sharing, and explicitly promote a culture of respect and inclusion, valuing differences among generations and applying effective communication strategies (Marsick & Watkins, 2003). These approaches aim to address shared needs and preferences across these generations, optimizing resource utilization (Gouda & Tiwari, 2022). In other words, initiatives such as improved embedded systems, which fulfil practical needs, and collaborative tactics that align with organizational goals, are applicable not only to Generation Y but also to Generation X, as strong similarities exist between these neighbouring generations.

7. Theoretical contributions

The study contributes to existing theories by providing empirical evidence, validating, and extending insights into generational differences in learning preferences and work dynamics. By delineating the impact of organizational learning culture (OLC) on adaptive performance in the public sector, the research highlights the need for a theoretical framework that encompasses the unique traits of different generational cohorts. This extension provides a comprehensive depiction of how generational dynamics intersect with learning strategies within an organizational public service (non-profit) context. Analyzing work-life perceptions, motivations, responses to change, conflicts, and team dynamics offers insights for re-addressing HR strategies (Al-Asfour & Lettau, 2014; Siziba & Barnard, 2023; Belias & Trihas, 2023; Ntalakos, Rossidis, & Belias, 2022). This way, HRM practitioners can evaluate, before application, learning strategies and interventions to align with the distinct preferences and perceptions of each generation of the workforce. The negative correlations observed in specific instances prompt further inquiry into the dynamics of how different generations interpret and engage with organizational factors, offering avenues for refining existing theoretical frameworks.

8. Limitations and future research agenda

The confirmatory and exploratory findings provide evidence of how organizational learning culture

influences multigenerational performance in the Greek Public Employment Services. However, limitations inherent in applied research, including limited access to the dataset, are acknowledged. The small sample size of 238 responses (11% of 2,126) raises concerns, compounded by potential non-response bias. Further research with larger datasets across Public Employment Services could uncover, explore, and explain more.

Notably, the study's findings apply to Generation X and Y, suggesting the need for future research to encompass Baby Boomers and Post-Millennials. Longitudinal studies could provide deeper insights. Additionally, the study's generalizability to other public organizations is limited, as data were collected from a specific entity (DYPA). To enhance generalizability, future research should consider diverse organizations for a more comprehensive perspective. To broaden the generalizability research could include private enterprises too. Accordingly, cross-cultural studies could discern the nuances of generational differences and similarities in various cultural contexts, other than the Western societies.

9. Conclusion

This study examined the influence of generational dynamics on organizational performance through the lens of the organizational learning culture. While generational groups exhibited unique perspectives, values, and work-life orientations, the shared traits across Generation X and Y produced an additional avenue for common approaches. Leveraging these commonalities can streamline management strategies, minimizing the need for resource-intensive diversification. On the theoretical front, this research extends its impact beyond the organizational context. By exploring generational learning styles, societal influences, and dynamics, it contributes to educational theory, communication studies, sociology, and management sciences. These insights enrich our knowledge of multifaceted work behaviours and interactions across generational lines.

While acknowledging limitations inherent to practical research, this study provides the basis for future exploration. With the focus primarily on Generation X and Y, probing the generational attributes of Baby Boomers and Post-Millennials offers a promising direction for future studies. This research has proposed ways for the harmonization of generational diversity by embracing shared attributes while respecting and addressing individual differences. By leveraging generational traits to bolster organizational goals, leaders can benefit from organising an environment of mutual growth and adaptive performance enhancement.

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