REVIEW

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Citizens' expectations about public services: a systematic literature review

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Citizens hold varying expectations and demands regarding the quality, performance, and efficiency of public services. How governments respond to citizens' expectations about public services (CEPS) to increase trust and satisfaction with government has been a consistently important research topic. However, the existing literature lacks a holistic understanding of CEPS. Following the PRISMA 2020 guidelines, this article presents a systematic review of 119 studies conducted between 1978 and 2023, exploring conceptual ambiguities, conflicting typologies, and inconsistent findings on CEPS in public service settings. Importantly, this study identifies a discourse explaining the antecedents and consequences of CEPS, which encompasses five broad categories: individual, political, organizational, economic, and technological factors related to CEPS. Expectations are diverse and dynamic, and understanding their role in governance requires linking them to broader factors, particularly the adoption of modern technology. These findings have important implications for research and practice in government trust and public service satisfaction.

Introduction

In contemporary public management, the shift toward citizen-centered governance has placed citizens' expectations about public services (CEPS) at the forefront (Andrews and Shah, 2003, Kim et al., 2022). Recognized as a central topic, CEPS has garnered growing scholarly attention across various disciplines, reflecting their multifaceted impact on public service delivery and policymaking (James, 2011, Oliver, 2014, Van Ryzin, 2004). CEPS fundamentally reflect their needs for prioritization, efficiency, and responsiveness in public services, playing a critical role in enhancing citizen satisfaction and trust (Morgeson, 2014). These expectations help predict citizens' intentions to adopt modern public services such as e-government, m-government, and AI-government (Mensah et al., 2020a, Madan and Ashok, 2023). Moreover, CEPS functions as a political accountability mechanism, holding public executives answerable to citizens' benchmarks (Romzek and Dubnick, 1987). In this sense, CEPS not only shapes satisfaction and trust but also underpins democratic oversight of service performance.

Despite the breadth and depth of existing studies, there is a clear need for an in-depth review of CEPS, particularly in terms of conceptual ambiguity, diverse and often conflicting typologies, and inconsistent empirical findings (Favero and Kim, 2021). First, the definitional problem of CEPS is evident in the wide and confusing range of definitions, with up to 31 different definitions proposed by Venkatesh et al. (2003), among others, reflecting varying understandings of CEPS.

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Second, the distinction between normative CEPS (what citizens believe should happen) and predictive CEPS (what citizens think will happen) creates significant challenges in practice. Hjortskov (2020a) notes that citizens often struggle to differentiate between these two types of CEPS, which complicates the design of service evaluations and satisfaction surveys. Finally, the impact of different factors, such as political influences on CEPS, has produced mixed results in research. This is particularly true in modern technology-driven public services, where government trust significantly affects CEPS, compared to a relatively weaker impact in traditional public services (Baute, 2022). Therefore, addressing these inconsistencies through a review will not only deepen our understanding of CEPS but also underscore its continued importance as a key research topic.

To address these inconsistencies, we conducted a systematic literature review of 119 empirical and theoretical studies published between 1978 and 2023, following the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA, Page et al., 2021) statement. This article addresses the following research questions:

(1) How are CEPS conceptualized in public service settings?
(2) How are CEPS classified and measured in public service settings?
(3) What are the antecedents of CEPS in public service settings?
(4) What are the outcomes of CEPS in public service settings?

Answering these research questions is crucial for gaining a deep understanding of CEPS through in-depth analysis. This article contributes to the topic in three key ways: First, it integrates some of the fragmented issues surrounding CEPS in public service settings by creating a unifying framework that allows scholars to compare the consistency and differentiation of the concepts, types, and measures of CEPS. Second, the paper provides a detailed illustration of what is currently known about the antecedents (where CEPS comes from) and outcomes (where CEPS leads) in both traditional and modern public service contexts. This is especially relevant for public managers, as it allows them to proactively shape citizens' realistic CEPS. Third, we proposed five propositions. These emphasize the importance of distinguishing between normative and predictive CEPS when measuring it, as they have very different impacts on satisfaction and are crucial for the design of service assessment instruments. We also highlight the need to establish equivalence tests for CEPS measurement through comparative studies across different countries and government levels. Additionally, we stress that the outcomes of CEPS in modern public service environments should be analyzed within a technological context to make valid inferences about the transformational effects in the public sector.

The remainder of the article is structured as follows: The first section provides a theoretical foundation for the existing knowledge on CEPS. Next, we detail the methodology used to conduct this systematic literature review. Following that, we present the review results and answer the four research questions. Finally, we present five recommendations and future research directions to guide sustainable research on CEPS in public service settings.

Historical and theoretical foundations of CEPS

In the social sciences, expectations are generally understood as anticipatory beliefs about future events or desired outcomes (Chamlee-Wright and Storr, 2010, Miceli and Castelfranchi, 2014), and they have a rich historical foundation. In the 18th century, Adam Smith, in *The Wealth of Nations* (Smith, 1901), highlighted how rational expectations of consumers influence market dynamics and the valuation of goods—a concept that has since evolved within economics to encompass complex models of forecasting and decision-making under uncertainty. This basic economic analysis of expectations has continued over time. With the rise of psychology, the study of expectations expanded to include implications for theories of organizational behavior, individual behavior, and decision-making (Cyert et al., 1958, Katona, 1946, Turnley and Feldman, 2000). Building on this interdisciplinary foundation, the study of expectations now incorporates significant contributions from behavioral economics and rational expectations theory, examining how predictions based on available information guide consumer behavior and policy-making in economic and public administration contexts (Boulding et al., 1993, Fornell et al., 2020, Olkkonen, 2016, Manski, 2004, Vollero et al., 2023, Zhang et al., 2023).

In the public service setting, the concept of CEPS was notably advanced by Van Ryzin's (2004) adaptation of expectation disconfirmation models from economics, emphasizing how citizens' expectations shape their perceptions of public service efficacy and their subsequent behavior. Along with other models, such as the Service Quality Model (SERVQUAL), it offers multifaceted insights into the role of CEPS in shaping perceptions of public services (Sama et al., 2023). The literature on CEPS has categorized these expectations, distinguishing between normative and predictive expectations, and analyzing them in light of citizens' prior interactions with services (James, 2011). Some scholars have also examined minimum expectations (Valadi-khorram et al., 2020), desired expectations (Kim et al., 2017), and ideal expectations (Hwang and Park, 2023), which reflect different standards held by citizens. Moreover, CEPS research explores the technological frontier, investigating how citizens' expectations affect their acceptance and continued use of modern public services, such as e-government, m-government, and AI-based government services (Chen et al., 2023, Sharma et al., 2018, MacLean and Titah, 2022).

In addition, CEPS is situated within a broader framework of political accountability. As defined by Romzek and Dubnick (1987), political accountability is a strategy by which public institutions and their staff manage citizens' expectations. From this perspective, CEPS can act as a normative benchmark that citizens use to evaluate government performance. When citizens articulate their expectations of public service, they are in effect setting the standards by which administrative behavior will be judged (Zhang et al., 2023). Failure to meet these expectations triggers accountability mechanisms such as public scrutiny, political criticism, or electoral consequences (Hjortskov, 2019). Thus, CEPS not only plays a role in shaping perceptions of service quality but is also key in strengthening democratic oversight and governance responsiveness. Overall, these studies signal that CEPS is thriving as a key research area in contemporary public administration.

While previous studies have provided valuable insights into CEPS, several key areas remain incomplete in our understanding. First, there is a lack of unified conceptual and standardized measurement methods for different types of CEPS (Favero and Kim, 2021). To address this, we aim to synthesize the various conceptualizations and measurement scales, laying the groundwork for a more unified framework. Second, there is no consensus on the origin of CEPS. For example, while performance information has been shown to have little impact on normative CEPS (James, 2011, Favero and Kim, 2021), it remains unclear which factors significantly influence CEPS. Differences in local tax rates may play a role, with citizens potentially expecting higher service quality in a normative sense when they pay higher taxes (Hjortskov, 2020a, James, 2009). Finally, the outcomes associated with CEPS have been narrowly focused on satisfaction evaluation and the adoption of modern public services (Mok

et al., 2017). CEPS has not yet been linked to many classic and emerging topics in public administration, such as administrative burdens, red tape, public-private partnerships (Cepiku and Mastrodascio, 2021), and co-production in the digital age (Brandsen et al., 2018).

This article addresses these gaps by conducting a systematic review of the CEPS literature, aiming to deepen both the theoretical and empirical understanding of CEPS. The findings will help inform future research and guide public service practice.

Methodology and data selection
To address the research questions, we conducted a systematic literature review following the PRISMA guidelines to identify the existing body of knowledge on CEPS. We chose PRISMA for its transparency and comprehensiveness, which are crucial for minimizing potential publication bias and enhancing the replicability of our findings (Page et al., 2021). The PRISMA checklist for this article is provided in Appendix A. We accounted for potential publication bias by analyzing both positive and negative outcomes and broadening our search to diverse sources, ensuring a balanced perspective.

Eligibility criteria. This review focused on studies examining CEPS from the perspective of ordinary citizens and service users within the field of public administration. The review period was not limited to provide a comprehensive overview. We included both empirical and theoretical studies that have undergone peer review and are published in English. Detailed information on the eligibility criteria is provided in Appendix B.

Research strategy. In this review, we employed three search strategies. First, we reviewed the number of publications across all relevant disciplines using the Web of Science (WoS) and Scopus databases. Next, we conducted a record query across 46 public administration journals. Lastly, we performed a query on Google Books. All searches for these strategies were last updated in early December 2023. The complete search terms and strategies are detailed in Appendix B.

Record selection. Figure 1 visually represents the selection process. The comprehensive process for record selection is outlined in Appendix B, and all eligible records are listed in Appendix C. The final review includes 119 studies, comprising 116 articles and 3 books.

General results
The literature on CEPS has expanded significantly since 1978, encompassing 116 articles and 3 books, as shown in Fig. 2. In the past decade (2013–2023), 78.15% of the research on this topic was published. The year 2021 saw the highest number of publications, with 16 studies, closely followed by 15 studies in 2022.

The 116 eligible articles are spread across 69 journals, with eight journals accounting for more than a third of the total articles (42 articles; 36.2%). As detailed in Appendix D, the most prolific journals include *Journal of Public Administration Research and Theory* (8 articles), *Public Management Review* (8 articles), *Government Information Quarterly* (6 articles), *Information Journal of Public Administration* (5 articles), *Public Administration Review* (4 articles), *International Journal of Information Management* (4 articles), *Public Administration* (3 articles), *and Behavior & Information Technology* (3 articles). Of the top 22 journals, 45.45% are public administration journals. Out of the top 100 results on Google Books, our review identified three eligible records: (1) *Citizen satisfaction: Improving government performance, efficiency, and citizen trust* examined the role

of CEPS in measuring citizens' satisfaction (Morgeson, 2014); (2) *Experiments in public management research: Challenges and contributions* (the chapter *Expectations of and satisfaction with public services*) reviewed experimental and non-experimental research related to CEPS (Mok et al., 2017); and (3) *Does digital transformation of government lead to enhanced citizens' trust and confidence in government* empirically tests the effect of CEPS on the digital transformation of government (Mahmood, 2018).

Figure 3 illustrates the methods used in the CEPS study. Specifically, quantitative methods dominate (90.8%; 108 records), while qualitative methods are rare (5.9%; 7 records). Encouraging the use of qualitative methods is critical to gaining insight into citizens' understanding of CEPS, and tools such as interviews and case studies can be used to refine the measurement scale. The majority of CEPS data (75.6%; 90 records) comes from surveys, but there is a growing emphasis on experimental methods, with 11.8% (14 records) using virtual mini-experiments and field experiments. Data were primarily self-reported from a variety of populations, including general citizens (73.9%; 88 records), college students/employees (5.0%; 6 records), taxpayers (4.2%; 5 records), parents of students (1.7%; 2 records), immigrants (1.7%; 2 records), and senior citizens (1.7%; 2 records).

We also performed a Scientometric analysis using the bibliometrix tool (Version 4.0.1) in R (Aria and Cuccurullo, 2017), for presenting the thematic concentration in the field. This is essential to clarify the definition, types, antecedents, and consequences of CEPS. We gathered raw data for 116 articles in plain text format from both Web of Science (WoS) and Scopus databases. To ensure consistency in data analysis, we harmonized the data from Scopus to match the format of WoS data. This comprehensive approach allows us to identify core themes.

As illustrated in Fig. 4, the co-occurrence mapping of research topics suggests that studies on CEPS can be categorized into three distinct clusters. Cluster A primarily focuses on general theoretical aspects of traditional public services, with prevalent keywords like "expectations," "performance," "customer satisfaction," and "determinants," suggesting a more conceptual approach. Conversely, Clusters B and C are more practical and centered around modern public services, such as e-government, highlighted by keywords like "user acceptance," "information technology," "trust," "technology," and "adoption," emphasizing practical applications and citizen engagement with new technologies.

Research question 1: How are CEPS conceptualized in public service settings?
In this section, we explore the conceptualization of CEPS in the reviewed sample in two distinct ways: (1) by examining the types of public services referenced in the conceptualization of CEPS, and (2) by analyzing the most frequently cited definitions of CEPS.

Before examining the service context and defining clusters, it is important to re-emphasize that CEPS both shapes citizens' perceptions of public service quality and embodies an expectation of political accountability - citizens demand that public officials be held accountable for service delivery (Romzek and Dubnick, 1987). Specifically, CEPS studies encompass a wide range of public service areas. As shown in Fig. 5, approximately 50 percent of the studies focus on basic services, such as overall public services, e-government public services, policing services, and m-government public services, which are core aspects of citizens' daily interactions. Additionally, the studies extend to specific services such as e-tax services, public health, and public transportation. These results enhance our understanding of CEPS commonalities by demonstrating CEPS in various service
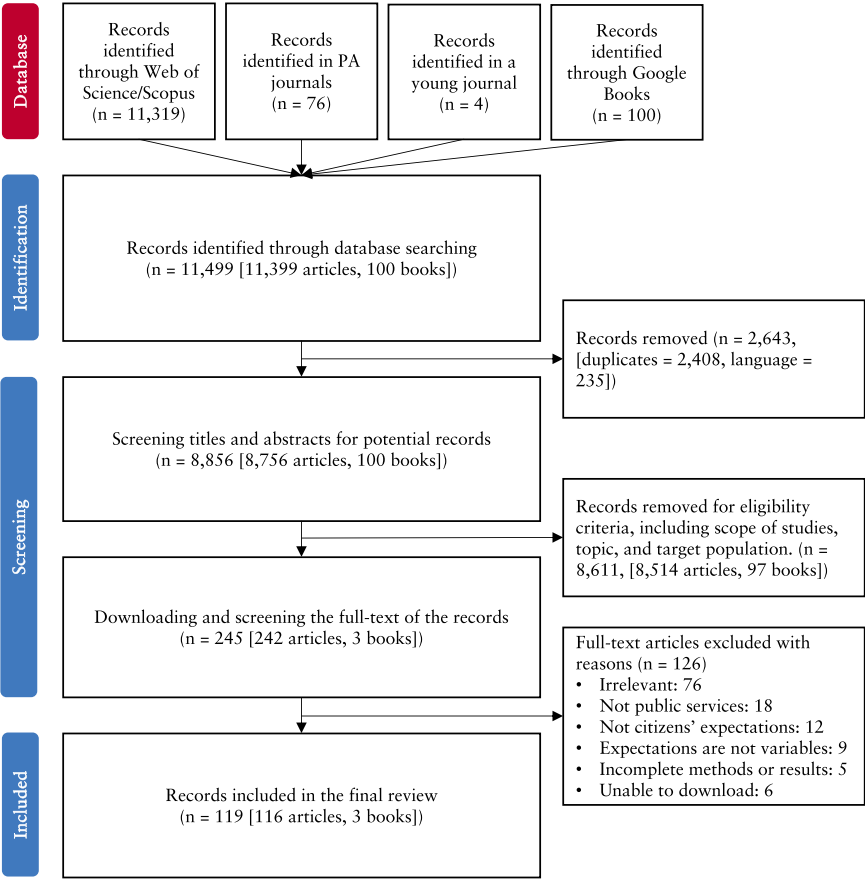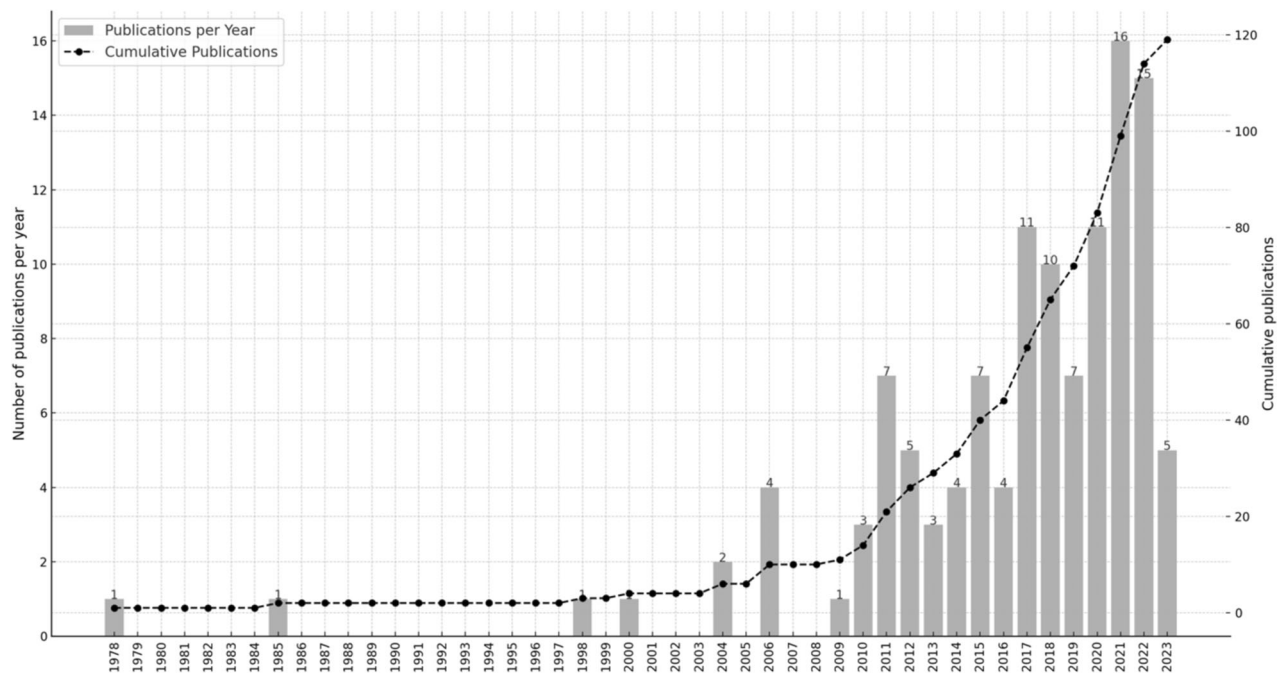
Fig. 1 Flow diagram of the search strategy.

Fig. 2 Number of publications per year, 1978–2023 ($n = 119$).

scenarios, thus laying the groundwork for constructing a unified and referable definition of CEPS.

The review found that approximately two-thirds of the sample (76 records; 63.9%) defined CEPS. By combining similar definitions and eliminating oversimplified ones, we identified a total of 31 different definitions. Definitions from seven different authors are frequently referenced, with James (2009, 2011), Venkatesh et al. (2003), and Venkatesh et al. (2012) being cited
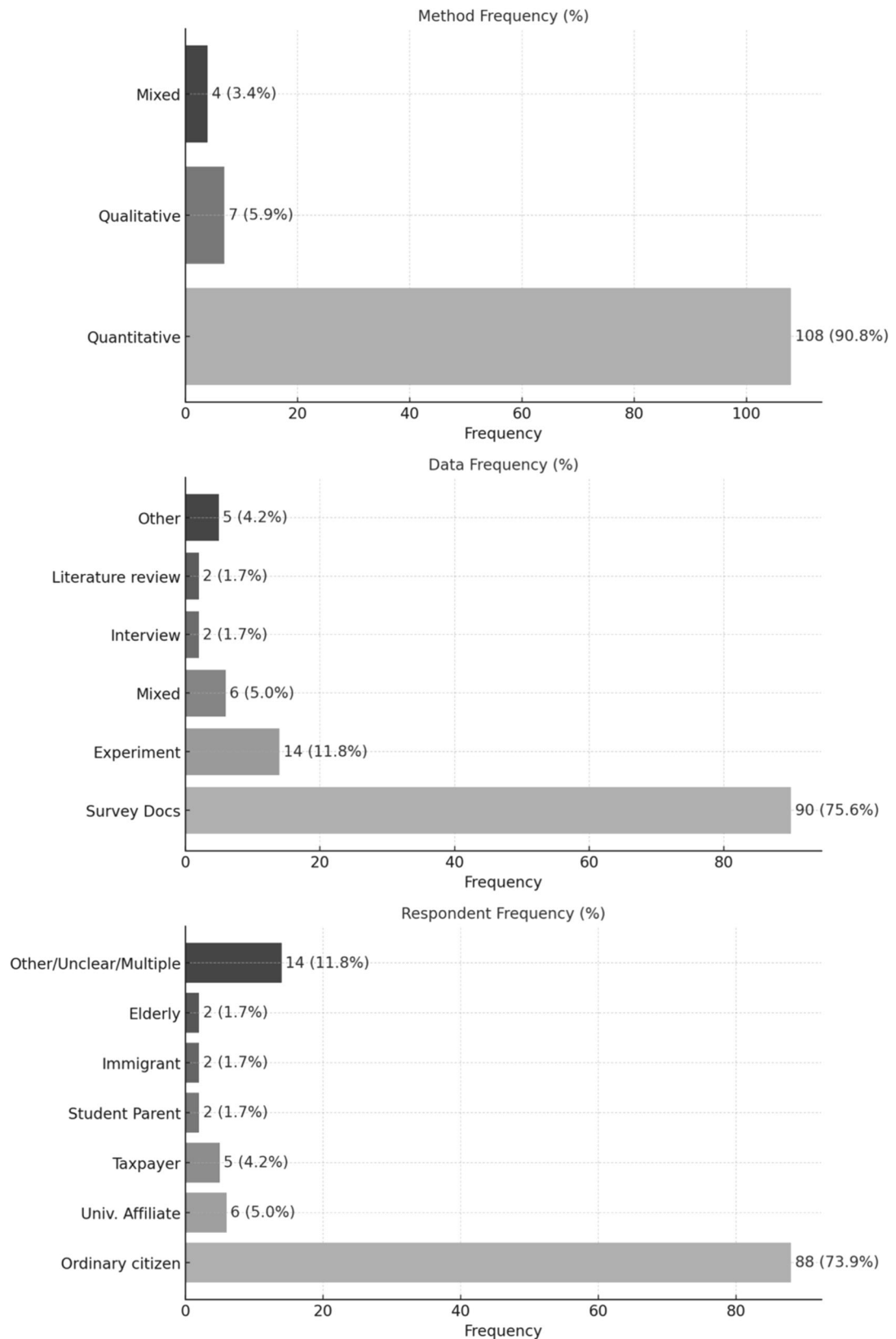
Fig. 3 Research methodology. The category Survey Docs, "Survey/Survey-based archived documents"; Univ. Affiliate, "University student/employee"; Student Parent, "Parent of the student"; Elderly, "Elderly citizen"; Other/Unclear/Multiple, "Other/unclear/Multiple types of participants".

over 10 times. Fourteen records (11.8%) introduced their unique definitions. Another 32 records (26.9%) assumed the concept of CEPS without offering a definition or referencing other scholars. The most cited definitions within the sample are presented in Table 1.

Drawing from the terminology analysis in Table 1, we categorized the conceptualization of CEPS into four distinct groups. First, CEPS are perceived as individuals' evaluative judgments. As highlighted by Van Ryzin (2004, 2006), citizens form CEPS before their actual service experiences. Consequently, CEPS are believed to reflect citizens' anticipations regarding the future performance of public services or products (Morgeson et al., 2011). Over time, James (2011) expanded the definition to include both normative and predictive CEPS, a distinction later recognized by public administration scholars such as Favero and Kim (2021) and Hjortskov (2020a). However, there remains debate about whether CEPS should be interpreted as predictions about the probable

Fig. 4 Mapping of the research theme co-occurrence network.
A Theoretical-traditional cluster (e.g. "expectations,""performance," etc.); (**B**) Modern public-service cluster (e.g. "user acceptance,""IT,""trust"); (**C**) Citizen engagement/technology cluster (e.g. "adoption,""trust,""engagement"). Circle size corresponds to the co-occurrence frequency. The width of the linking lines indicates the strength of the relationship between co-occurring nodes.

nature of a product or service, as Mahmood (2018) argued that CEPS represent what customers believe they should receive, not necessarily what is available.

Second, CEPS are perceived as establishing a benchmark that individuals use for comparative evaluations (Zhang et al., 2022, Zhang et al., 2023). Reviewing the marketing literature, Oliver (1980) suggests that an individual's expectation of services or products can serve as an adaptation level, acting as a frame of reference that, once established, guides individuals in their future evaluations. However, the notion of using CEPS as a reference point has sparked debate (Bellé et al., 2023). Oliver (2014) and others argue that expectations may be ambiguous or even absent in individuals' minds, implying that they might not always serve as a distinct benchmark influencing citizens' subjective judgments.

Third, CEPS are tied to individual benefits. This perspective originates from the rise of information and communication technology (ICT) and emphasizes the role of CEPS in predicting individuals' intention to adopt or use modern public services (Weerakkody et al., 2013, Sharma et al., 2018). Within this context, the personal interests of citizens or service users have been emphasized (Piehler et al. 2016). Specifically, an individual's intention to adopt or use a service could be shaped by the benefits they anticipate and the perceived ease of use associated with technology-driven modern public services (Venkatesh et al., 2003, Venkatesh et al., 2012).

Finally, CEPS pertains to citizens' affective anticipations, which encompass desires and beliefs. Oliver (2014) highlights that affect refers to the emotional aspect of consciousness. A positive affective reaction, like satisfaction, occurs when initial CEPS are met, whereas a negative reaction, such as dissatisfaction, surfaces when CEPS are not fulfilled. Consequently, some studies define the concept of CEPS (dis)confirmation and emphasize its role in shaping satisfaction responses (Oliver, 2014). For instance, Akram et al. (2019) describe citizens' CEPS confirmation as the degree to which they realize the anticipated benefits from e-government services.

Although approximately two-thirds of the studies surveyed defined CEPS, some of these definitions were overly simplistic, while others were highly complex. Therefore, to address this issue, we propose a comprehensive and up-to-date definition of CEPS
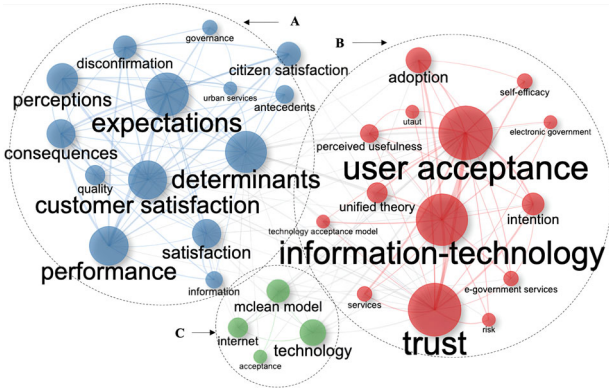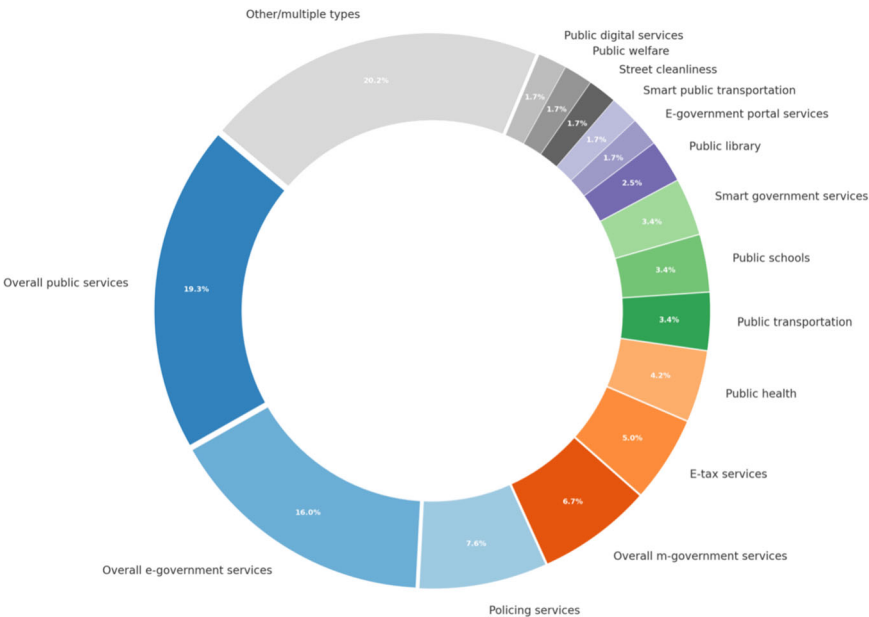

Fig. 5 Types of public service in CEPS studies.

Table 1 Most cited definitions of CEPS.

Conceptualization	Terminology Used	Definitions	Source	Times Cited
Judgmental evaluations	Judgments	"…judgments of what individuals or groups think either will or should happen under particular circumstances."	James (2009, 2011)	13
	Anticipation	"…anticipation of future consequences based on prior experience, current circumstances, or other sources of information."	Oliver (1997)	4
	Prediction, anticipation	"…the consumer's or citizen's predictions or anticipations of the performance of a product or service."	Van Ryzin (2004, 2006)	4
	Estimate	"… a person's estimate that a given behavior will lead to certain outcomes."	Bandura (1977)	2
Benchmarking	Frame of reference	"…expectations are thought to create a frame of reference about which one makes a comparative judgment."	Oliver (1980)	8
	Referential standard	"…the referential standard in a citizen's mind at the time of evaluating a service."	Petrovsky et al. (2017)	2
Personal benefits	Gains	"…the degree to which an individual believes that using the system will help him or her to attain gains in job performance."	Venkatesh et al. (2003), Venkatesh et al. (2012)	31
	Ease	"… the degree of ease associated with the use of the system."	Venkatesh et al. (2003), Venkatesh et al. (2012)	30
Affect	Desires, wants	"…desires or wants of consumers, i.e., what they feel a service provider should offer rather than would offer."	Parasuraman et al. (1988)	4

that explicitly takes into account the normative-predictive distinction as well as the evolving technological landscape.

"Citizens' Expectations about Public Services (CEPS) are the beliefs and assumptions individuals hold regarding the quality, benefits, and outcomes of public services. These expectations encompass both normative expectations (what citizens believe *should* happen) and predictive expectations (what citizens anticipate *will* happen) and are shaped by past experiences, current circumstances, future hopes, and technological developments. In modern public service contexts, particularly with the integration of digital and AI-based services, citizens' expectations increasingly reflect both desired standards and anticipations of technological capabilities."

Research question 2: How are CEPS classified and measured in public service settings?

As noted, we identified several definitions of CEPS, which allowed us to classify different types of CEPS based on their measurements. In this section, we examine the typology of CEPS in two ways: (1) by analyzing the classification of CEPS in our reviewed samples, and (2) by reviewing CEPS measurement scales and methodologies.

Types of CEPS. Based on the terminology used in the reviewed sample, we identified four types of CEPS (as shown in Fig. 6). These encompass (1) CEPS in the general sense and their confirmation and disconfirmation, (2) performance expectations and effort expectations, (3) the dichotomy of normative versus predictive CEPS, and (4) expectations of service contents and their priorities. These categorizations reflect the transition from a broad understanding of CEPS to more nuanced types, with the latter emerging as more significant in public service settings in recent decades.

According to our review, it appears that 46 studies (38.7%) focus on general CEPS and/or disconfirmation, with variations depending on whether they originate from the citizen satisfaction literature or the public service quality literature (Sharma et al., 2018, Badri et al., 2015). In the citizen satisfaction literature, general CEPS are structured based on the framework established by the American Customer Satisfaction Index (ACSI), which was pioneered in a public service setting by Van Ryzin in 2004. In the

public service quality literature, the scales for general CEPS were initially developed by Parasuraman et al. between 1985 and 1991.

However, the use of general CEPS may lead to confusion. Since CEPS are fundamentally individuals' subjective perceptions (Brown and Coulter, 1983), it is plausible that citizens could have varied interpretations of general CEPS. In particular, it remains uncertain whether citizens consistently use the same level or type of CEPS as a benchmark when evaluating satisfaction with the EDM model (Van Ryzin, 2006).

To address this confusion, James (2009, 2011) distinguished between citizens' normative and predictive (also termed positive) CEPS. Although normative and predictive CEPS scales are not as widely used as general CEPS, they have seen notable advances in recent years, accounting for about 10.1% (12 records) of the sample. For example, Hjortskov (2020a) revealed that citizens interpret CEPS differently and may be unaware of the distinction between predictive and normative CEPS. James (2011) and Hjortskov (2019) demonstrated that normative CEPS remain consistent and are less influenced by previous performance than predictive CEPS. Other studies also suggest that normative CEPS plays a more influential role in determining citizen satisfaction with public services (Favero and Kim, 2021). Nevertheless, the distinction between normative CEPS (dis)confirmation and predictive CEPS (dis)confirmation remains under-explored (Jacobsen et al., 2015, Lee et al., 2022). This area offers intriguing possibilities for incorporating normative and predictive CEPS (dis)confirmation into EDM research, potentially paving the way for a more accurate measurement of citizen satisfaction.

Although research on normative and predictive CEPS has made substantial progress, there remains a lack of standardized measurement methods. For example, while Hjortskov (2020a) employed Van Ryzin's (2004, 2006) scale to gauge predictive CEPS, it appears that Van Ryzin's scale does not fully capture predictive preferences (as corroborated by Favero and Kim, 2021). Furthermore, although the question posed by Favero and Kim (2021) to assess normative CEPS signals a normative preference (using the term *should be*), the options provided seemed more aligned with the adequate or minimum tolerable level (using terms *acceptable/unacceptable*). Given the consensus within social science research on defining expectations, there is a pressing need to develop standardized scales to measure citizens' normative and predictive CEPS.

Additionally, 36 records (30.3%) use the concepts of performance expectations (PE)—which refers to the extent to which individuals find new services beneficial—and effort expectations
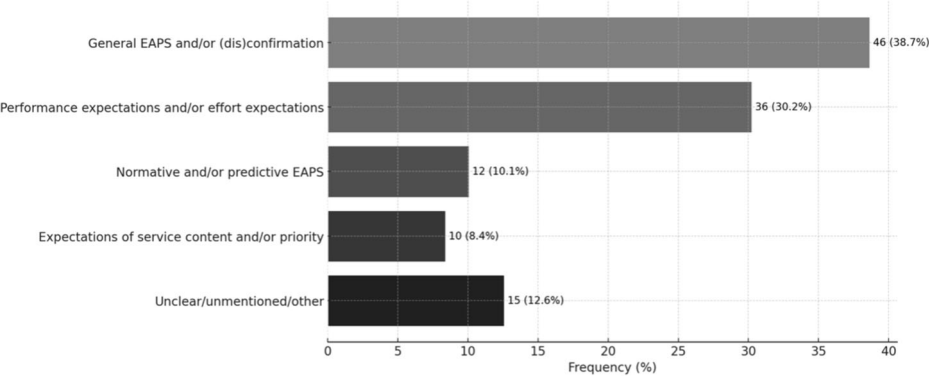
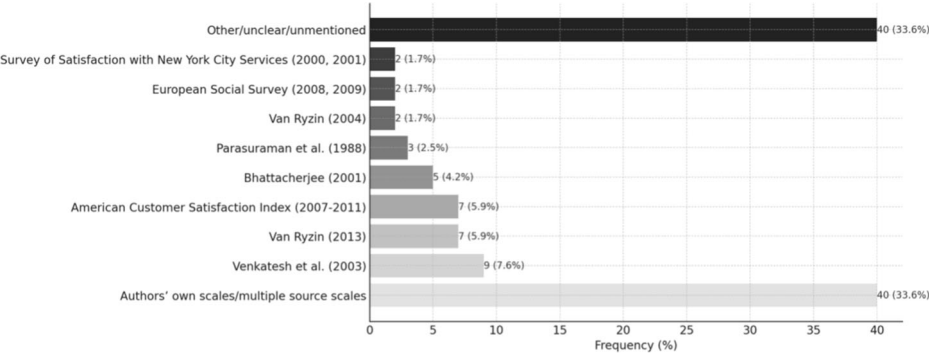**Fig. 6 Frequency distribution of CEPS types measured.**

Fig. 7 Frequency distribution of CEPS measurement scales used.

(EE)—which refers to the degree to which individuals feel new services reduce mental and physical exertion—when examining citizens' adoption and use of modern public services (Sharma et al., 2018, Mensah, 2019). The application of PE and EE aligns with scales developed by Venkatesh et al. (2003). Unlike general, normative, and predictive CEPS, which focus on public organization performance, PE and EE emphasize individual citizens' anticipated benefits from interacting with technology-driven public services. These benefits include enhanced personal efficiency through quicker services and reduced effort in service utilization. How citizens perceive their proficiency in using technology, such as computers or smartphones, for modern public services directly affects their PE and EE, thereby shaping their usage intentions (Alruwaie et al., 2020). This presents a challenge for practitioners and scholars to accommodate the diverse demands of citizens, considering factors such as gender, age, and information technology aptitude, especially when introducing new modern public services.

In addition, 10 records (8.4%) focus on expectations regarding the service content provided by public organizations and their priorities. Understanding these CEPS is crucial for comprehending citizens' service requirements in emergencies or unfamiliar scenarios. For instance, effectively managing these expectations, such as prioritizing anticipated services, can help mitigate or even prevent public panic during pandemics (Zarei et al., 2021, Ma et al., 2022). It can also enhance citizen satisfaction and foster compliance with urgent public policies (Rothmann, 2006).

In summary, our review identifies multiple types of CEPS, highlighting the multidimensional nature of citizen expectations in public service settings. Understanding these dimensions is critical for both scholars and practitioners. A clear distinction between normative and predictive CEPS, with an emphasis on performance and effort expectations, provides the foundation for developing standardized measurement scales. These scales will help assess service performance and citizen satisfaction more accurately. Additionally, recognizing the role of service content expectations can guide public service design to better meet citizens' needs, especially in crises. Future research should continue to refine these categorizations and explore their implications for public service delivery and citizen engagement.

Measurement scales. Our analysis of scales, research methods, and participants indicates that most measurements target ordinary citizens, utilizing quantitative surveys based on a few traditional scales. Figure 7 presents the studies and references scholars have used to measure CEPS. Specifically, CEPS scholars frequently draw from archival documents, including the ACSI (2007–2011), the Survey of Satisfaction with New York City Services (SSNYCS), and the European Social. The general/(dis)confirmation CEPS scale by Van Ryzin (2004, 2013), derived from the ACSI and SSNYCS, is also frequently referenced.

Additionally, James's (2009, 2011) scales for normative and predictive CEPS, often used alongside Van Ryzin's scale (Van Ryzin, 2004, Van Ryzin, 2013), are categorized under the "authors' scales/multiple source scales" in Fig. 7 (40 records; 33.6%). However, the use of normative and predictive CEPS scales remains contentious. For instance, it has been explicitly stated that "no existing study in public service settings has asked about predictive expectations in a purely non-normative manner" (Favero and Kim, 2021, 567). Their empirical research identifies various types of normative CEPS (using the term should be) and provides respondents with choices based on the minimum acceptable level of service (Poister and Thomas, 2011). This offers a foundation for objectively measuring normative CEPS.

Table 2 Summary of CEPS antecedents.

Antecedents	TPS				Total TPS	MPS				Total MPS	Total
	+	−	+ −	/		+	−	+ −	/		
Individual antecedents											
Psychological condition	2	1	0	1	4	6	3	0	0	9	13
Age	3	1	0	0	4	2	0	0	0	1	6
Education	1	3	0	0	4	1	0	0	0	1	6
Gender	3	0	0	0	3	0	2	0	0	1	5
Income	0	3	0	0	3	0	0	0	0	0	3
Marriage	2	0	0	0	2	0	0	0	0	0	2
Political antecedents											
Trust	4	0	0	0	4	7	0	0	0	7	11
Prior expectations	1	0	0	0	1	6	0	0	0	6	7
Bureaucratic image	4	1	0	0	5	0	0	0	0	0	5
Service encounter	0	2	0	0	2	2	0	0	0	2	4
Service/political knowledge	1	1	0	0	2	0	0	0	0	0	2
Organizational antecedents											
Performance/Quality	10	1	0	2	13	1	0	0	0	1	14
Technological antecedents											
Technological characteristics	0	0	0	0	0	8	0	0	0	8	8
Economic antecedents											
Fiscal spending	1	1	0	0	2	0	0	0	0	0	2
Other	8	0	0	2	10	5	1	0	0	6	16
Total	43	14	1	4	60	36	6	0	0	44	104

Notes:[1] Valence: + (positive), − (negative), + − (positive and negative), / (neutral).
TPS traditional public service, *MPS* modern public service.

However, based on the consumer expectations literature, CEPS is not necessarily viewed as "concrete levels or even as likelihoods of known levels" (Oliver, 2014, 69). This is because, as Oliver notes, CEPS might operate "in a less exact or measurable manner" (Oliver, 2014, 64). Given the distinct differences in service nature, organizational goals, and target audiences between the public and private sectors, debates about the correct measurement of normative CEPS will likely persist.

Furthermore, in the model developed by Venkatesh et al. (2003), PE and EE, combined with social influence and facilitating conditions, form the four core dimensions of UTAUT. These have emerged as principal indicators of citizens' inclination to adopt e-government, m-government, and AI-government services. The scale by Venkatesh et al. (2003) has been widely adopted in subsequent research on PE and EE, especially regarding the pre-usage phase of modern public services. Scales formulated later by Bhattacherjee (2001) assess whether citizens' expectations are met or unmet after engaging with online services (Aftab and Myeong, 2022, Prakash et al., 2021).

Overall, multiple comprehensive scales are available for public administration research. Their adoption depends on the research focus—whether on general, normative, or predictive CEPS in traditional public services; PE and EE in modern public services; or specifically on service content expectations and prioritization, as outlined by other authors.

Research question 3: What are the antecedents of CEPS in public service settings?

Forty-five empirical studies, comprising 104 relationships, have provided primary evidence on the antecedents that shape CEPS, as shown in Table 2. These studies explore 62 relationships related to antecedents in traditional public services and 42 in modern public services. We extend Overman's (2016) "Economic-Political-Organizational" framework by adding categories for individual and technological antecedents to cover all relationships.

Individual antecedents. Individual factors are common antecedents of CEPS, with more than a third of studies (34%) exploring these factors. In these studies, the psychological dimension of the individual is particularly important in the development of CEPS. For example, a questionnaire study in traditional public service found that the Big Five personality traits were strongly associated with CEPS (Hjortskov, 2020b). Specifically, agreeableness, conscientiousness, and openness were positively correlated with normative expectations, while extraversion was inversely correlated; none of these personality traits were related to predictive expectations. This finding is thought-provoking because public administration scholars have consistently shown that normative expectations are more resistant to change than predictive expectations (James, 2011). These insights help reveal the underlying drivers of normative expectations, which is crucial since normative expectations play a larger role in shaping citizens' satisfaction with public services (Favero and Kim, 2021).

In modern public services, citizens' psychological condition also plays a key role in shaping CEPS. This influence is reflected in studies by Alruwaie et al. (2020) and Chan et al. (2010), which reveal a positive correlation between CEPS and citizens' self-efficacy and self-actualization. Moreover, negative effects such as technology anxiety and perceived risk, highlighted in studies by Talukder et al. (2020) and Bhuasiri et al. (2016) emphasize the challenges of integrating new technologies. Overall, these studies underscore the influence of individual psychological factors on CEPS in modern public services, reflecting broader trends in the theoretical and practical aspects of contemporary public administration (Baute, 2022, Morgeson, 2013, Park and Lee, 2018, Chan et al., 2010).

Different populations also exhibit different CEPS. Studies have shown that older adults (Morgeson et al., 2011, Mensah et al., 2020b), women (Albertini and Semprebon, 2018, Webb, 1998), and married individuals (Webb, 1998) typically have higher CEPS. These demographic characteristics are often used as control variables in related studies and are not always explained

in detail. A plausible explanation is that there is cognitive ambiguity in the delivery of public services among these groups, leading to unrealistically high expectations. Conversely, those with (Baute, 2022, Seyd, 2016) and higher incomes (Baute, 2022, Webb, 1998) tend to have more stringent expectations of public services and therefore report lower CEPS.

Political antecedents. Political antecedents encompass the broad interactions between citizens and public organizations. Within our sample, 22 relationships (21%) explore political factors influencing CEPS, covering aspects such as trust, prior expectations, and bureaucratic image. The influence of trust as a precursor to CEPS is more pronounced in modern public services, with 11 relationships identified, compared to 7 in traditional services. Notably, increases in CEPS are consistently linked to trust in government and internet systems across various contexts (Baute, 2022, Chan et al., 2010, Park and Lee, 2018, Morgeson, 2013). This dynamic spans trust in local, federal, and supranational institutions, as well as in traditional and digital government platforms (Baute, 2022). Given this evidence, politicians in developed democracies might leverage the reshaping of public trust to reinvigorate citizen confidence and garner electoral support.

Trust is built over time, and CEPS are inherently recursive. As citizens interact with public services almost daily, CEPS is dynamic and continuously evolving. CEPS is rooted in prior expectations (Hjortskov, 2019), and interactions with public services diversify the changes in CEPS (Alruwaie et al., 2020, Carter, 1985). Interestingly, increased contact with traditional services tends to reduce CEPS, while frequent engagement with modern services tends to enhance them (Hung et al., 2020). Consistent with the need to build trust, leveraging the integration of technology in public services presents a strategic opportunity for politicians to reshape the relationship between citizens and government and improve citizens' evaluations of service delivery (Lee et al., 2022).

Another parallel argument emphasizes the image of the bureaucrat. Positive portrayals through media (Schack and Frank, 1978), strong agency reputations (Baser and Tan, 2023, Dantas Cabral et al., 2021), and symbolic representations (Dantas Cabral et al., 2021) can significantly increase CEPS (Baser and Tan, 2023, Dantas Cabral et al., 2021). Conversely, a corrupt image of the government has led to a decline in CEPS (Hwang and Park, 2023).

The final political factor influencing CEPS is the political knowledge possessed by citizens. In traditional public service contexts, the more knowledge citizens have about public services, the higher their CEPS (Wang and Fan, 2022). However, greater knowledge about the political system tends to reduce CEPS (Seyd, 2016). Notably, increased political knowledge across society can help counter political disappointment by narrowing the gap between perceived political outcomes and desired outcomes (Seyd, 2016).

Organizational antecedents. Organizational antecedents in our sample primarily relate to the performance or quality of services provided by public organizations, particularly within traditional public service settings. Our review reveals that ~13% of the relationships examined directly link public service performance with CEPS. Most of the evidence (79%) supports a positive correlation between public service performance information and CEPS, suggesting that positive performance feedback enhances CEPS (Hwang and Park, 2023, Alruwaie et al., 2020), while negative feedback leads to reduced CEPS (Hjortskov, 2019). Additionally, findings from a field experiment provide direct causal evidence of the impact of performance information on CEPS (James, 2011).

As noted in the response to the second research question, James's (2011) pioneering work has positioned the CEPS discourse in public administration around typologies of expectations. A key insight is that citizens' normative CEPS are more stable and generally unaffected by performance metrics compared to predictive CEPS (Favero and Kim, 2021). This has sparked debates about which type of CEPS citizens use as benchmarks when reporting satisfaction with public services. Overall, predictive expectations are more easily influenced by organizational performance information, but their impact on satisfaction is minimal. Conversely, while normative expectations are not as susceptible to performance fluctuations, they serve as a key reference point for shaping satisfaction ratings (Favero and Kim, 2021).

Technological antecedents. The role of technological factors in shaping CEPS has become increasingly significant as modern public services integrate advanced technologies such as automation, artificial intelligence, and big data. Public managers and scholars are increasingly concerned about the compatibility of technology with everyday life and its ability to adapt to change (Mensah and Mwakapesa, 2022). Technological convenience perceived reliability, and accessibility have been shown to enhance citizens' expectations of e-government services (Verkijika and De Wet, 2018, Mensah and Adams, 2020, Morgeson et al., 2011). Specifically, our review found that the mandatory adoption of smart cards for authentication and access to public services has significantly raised citizens' performance expectations by emphasizing features such as compatibility, flexibility, reduced interpersonal contact, and enhanced trust (Chan et al., 2010). Similarly, smart city services (SCS), underpinned by advanced ICTs, have been found to positively influence citizens' technological expectations by improving service content quality, expanding service channels, and strengthening support mechanisms, thereby enhancing overall perceptions of urban service accessibility (Huang et al., 2022) These technological features are closely linked to citizen trust and satisfaction, which form the foundation of CEPS. However, despite growing recognition of the influence of technological integration on CEPS, empirical research specifically examining the impact of emerging technologies such as artificial intelligence and big data analytics remains limited. Future studies are needed to explore how the deployment of these technologies reshapes citizens' normative and predictive expectations within modern public service environments.

In the current context of a crisis of public trust in many countries, technology integration offers a key opportunity to enhance the credibility of governments. As analyses have shown, citizens' contact with modern public services can help increase their CEPS (Hung et al., 2020). Therefore, governments and public agencies should seize this opportunity to provide high-quality modern public services that exceed CEPS through the effective integration of technology and services. This will not only enhance citizens' experiences with public services but also serve as a means to repair and strengthen public trust in government.

Economics antecedents. There is less evidence on how economic factors affect CEPS, and the results are mixed. By analyzing data from the European Social Survey (ESS) for 18 EU countries, Baute (2022) reveals a dual effect of welfare spending: while funding from the EU raises citizens' expectations of higher standards of social protection, substantial welfare spending at the national level may lower these expectations. This phenomenon can be explained by the anchor theory of expectations, which suggests that

Table 3 Summary of CEPS outcomes.

Outcomes	TPS				Total TPS	MPS				Total MPS	Total
	+	−	+ −	/		+	−	+ −	/		
Public service satisfaction	32	9	2	2	45	9	0	0	0	9	54
Public service perception	8	1	0	1	10	3	0	0	0	3	13
Trust	0	1	0	0	1	2	0	0	0	2	3
Public service transformation	0	0	0	0	0	2	0	0	0	2	2
Public service adoption	0	0	0	0	0	42	0	0	16	58	58
Other	4	0	0	0	4	1	0	0	0	1	5
Total	46	11	2	3	61	46	0	0	13	60	121

Note: [2]: Valence: + (positive), − (negative), + − (positive and negative), / (neutral).
TPS traditional public service, *MPS* modern public service.

individuals form expectations based on comparative standards (Van Raaij, 1989). For instance, James (2009), using data on local public services in England, found that citizens' satisfaction and dissatisfaction with services are not solely determined by absolute performance levels but are significantly influenced by anchored expectations. Similarly, Zhang et al. (2023) experimentally demonstrated that digital anchoring cues can negatively shift citizens' public service expectations. These findings collectively highlight the critical role of expectation anchors in shaping how citizens perceive service adequacy across different governance contexts. The significance of this finding extends beyond national and supranational levels, suggesting a need for better coordination of economic policies between different administrative levels within a country (e.g., between central and local or federal and state).

In summary, our review identifies several key antecedents that influence CEPS. Individual factors such as personality traits and demographic characteristics have a significant impact on CEPS. Political antecedents, including trust and political knowledge, also play a crucial role. Organizational performance feedback positively affects CEPS, while technological advances and their integration into public services raise citizens' expectations and trust. The mixed impact of economic factors highlights the need for coordinated policies. These insights provide a framework for understanding and managing CEPS in the public service environment.

Research question 4: What are the outcomes of CEPS in public service settings?
In this section, we synthesize 121 hypothesized relationships on the impact of CEPS across 81 empirical studies, as shown in Table 3. These relationships display a balanced distribution: 61 relationships explore the impacts of CEPS in traditional public services, while 60 relationships address the impacts in modern public services. The impacts of CEPS span the political, organizational, and technological dimensions. Overall, these impacts are primarily characterized by citizen satisfaction in traditional public services, whereas in modern public services, the focus is largely on service adoption.

Political outcomes. Political outcomes are changes in citizens' evaluations of government in terms of attitudes and behaviors, including satisfaction with public services, perceived service performance, and the level of trust in public institutions. These outcomes reflect the extent to which governments are effective in meeting or failing to meet citizens' expectations, affecting political legitimacy and citizen-government relations. Specifically, our analysis reveals an important link between CEPS and citizen satisfaction across a wide range of public services. 41 positive correlation results indicate that higher CEPS typically leads to increased satisfaction, driven by expected excellence in service delivery. This suggests that expectations form a positive feedback

mechanism in public service delivery. Conversely, findings from 9 negative and 2 mixed results suggest that unmet high expectations trigger dissatisfaction in areas ranging from general services to specific sectors such as street cleaning, public health, and advanced technology services like mobile and smart government initiatives (James, 2011, 11, Grimmelikhuijsen and Porumbescu, 2017, Mandari and Koloseni, 2021).

In addition to the explicit attitude of expressing satisfaction, ambiguous public perceptions of the quality and performance of public services are also affected by CEPS. Benchmarks set by CEPS typically enhance favorable perceptions of service delivery, supporting the alignment of service strategies with citizens' expectations (Badri et al., 2015, Porumbescu, 2017, Yilmaz et al., 2021). However, the effect of CEPS on perceived performance is sometimes not significant (Choi and Lee, 2020).

We also found that trust is not just an antecedent; CEPS also leads to increased trust in government. Although evidence on how CEPS affects trust remains limited, existing studies demonstrate two main features. First, these studies typically employ expectation non-conformity models and service quality models to explain public trust in government (Sharma et al., 2018). Second, CEPS has varying effects on trust across different public services. For instance, in traditional public services, CEPS is negatively associated with trust (Porumbescu, 2017), while in modern public services (e.g., e-government), CEPS consistently enhances public trust in government agencies (Morgeson et al., 2011). These findings suggest that governments meeting high public expectations for e-government through digital transformation may be able to mitigate the steady decline in public trust in government.

Overall, the relationship between CEPS and political outcomes underscores the importance of balancing CEPS to prevent negative impacts from overly high expectations (James, 2011, Luoma-aho and Olkkonen, 2016). Public managers and politicians need to adapt their service strategies in response to changes in CEPS and set realistic, achievable expectations through effective communication strategies (Seyd, 2016).

Organizational outcomes. Organizational outcomes refer to changes in public organizational performance, transformation processes and stakeholder relations that are influenced by CEPS. The impact of CEPS extends beyond the micro-level of individual attitudes and perceptions to the organizational level, particularly concerning the digital transformation of traditional governments. According to stakeholder theory, organizations that effectively manage their relationships with stakeholders generally perform better (Mahmood, 2018). Therefore, by establishing appropriate communication channels to manage public expectations regarding government transformation, the public can engage in active dialogue with the government about the digital transformation of

its core functions (Mahmood et al., 2019). This, in turn, can positively influence public trust and confidence in the government, facilitating its digital transformation (Morgeson et al., 2011). Although only two studies in the literature directly demonstrate that CEPS facilitates government transformation, these studies theoretically shed light on the role of individual citizens in driving this process, which is instructive.

Technological outcomes. Technological outcomes refer to changes in citizens' adoption, acceptance, and use of new public service technologies driven by CEPS. To drive organizational transformation, governments worldwide are promoting the adoption of new technologies to counter the continuing decline in government trust levels. As a result, public attitudes toward the adoption of modern public service technologies are particularly critical. This technological outcome of CEPS has received sustained attention in the field of modern public service.

Our analyses cover 42 instances of relationships showing that Performance Expectations (PE) and Effort Expectations (EE) are key drivers of modern public service adoption. Specifically, 27 instances directly demonstrate that boosting PE—expected efficiency and effectiveness—significantly increases service adoption (Zuiderwijk et al., 2015, Ramirez-Madrid et al., 2022). Another 15 instances reveal that EE, i.e., perceptions of the user-friendliness and technological sophistication of a service, similarly positively affect adoption rates (Park and Lee, 2018, Weerakkody et al., 2013). However, 16 instances showed that PE and EE did not significantly influence adoption rates. Thus, effective public service design must go beyond simple technological enhancements to include comprehensive user education and support strategies to ensure that technological solutions align with the public's actual needs and usage habits.

Discussion and conclusion

There are some obvious limitations to this study. First, the inclusion criteria limited our review to studies with a clear definition of CEPS, which may restrict the generalization of findings to unexplored areas. Second, the English language bias and concentration on peer-reviewed journals may have excluded important insights from articles published in other languages and informal sources. Additionally, the geographic distribution of studies is skewed toward developed countries, as few studies from developing country contexts met the inclusion criteria, potentially limiting the global applicability of the findings. Third, our dataset is heavily skewed toward quantitative studies (90.8%), with relatively limited representation of qualitative research (5.9%). This imbalance may restrict a deeper, contextualized understanding of CEPS that qualitative approaches often provide. Fourth, while our manual search strategies were broad in scope, they carry an inherent risk of selection bias and may miss cutting-edge or unpublished research, underscoring the need for ongoing reviews to maintain relevance. Furthermore, our review was based solely on published literature, so publication bias may be present in the analyses of CEPS antecedents and outcomes, as the academic publication process often favors positive or statistically significant findings. Finally, as this is a systematic review, no meta-analyses were conducted, partly due to the diversity of definitions, measures, and study designs, which made direct quantitative synthesis impractical.

This article provides an overview of research related to citizen expectations in the context of public services. By reviewing 119 studies that met our criteria, we observed significant progress in the field of CEPS. Accordingly, we propose five propositions that reflect the current state of knowledge and aim to guide future research directions, ensuring that CEPS remains a central topic in public management practice.

The analysis shows that, despite the large body of literature attempting to define CEPS, these definitions vary significantly in terms of their degree of simplification. CEPS is conceptualized as multidimensional constructs that incorporate evaluative judgments, benchmarking, personal interest expectations, and affective responses. For instance, some definitions view CEPS as citizens' predictive or normative evaluations of service performance, developed before the service experience and used as benchmarks to assess service outcomes. However, such benchmarking is not always clear-cut, and in some cases, may be absent altogether. As seen from the analysis of service types, the impact on CEPS varies across service areas due to differences in service content, standards, and the frequency of citizen interactions with the service. More importantly, rapid technological development and the widespread use of ICTs have shifted citizens' expectations of modern public services. Therefore, the uncertainty and dynamic nature of CEPS prompt us to propose the following proposition:

Proposition 1: The multidimensional and dynamic nature of CEPS in public services requires public managers to conduct continuous assessments and adjustments to meet changing CEPS.

Specifically, we recommend that governments and public organizations adopt digital tools to build real-time citizen feedback platforms, such as mobile apps, and online satisfaction dashboards, and conduct regular surveys on CEPS in different service areas. In addition, text, image, and video recognition technologies can be used to perform sentiment analysis of citizens' comments on public platforms, and technologies such as AI-driven service monitoring systems can be used to continuously detect emerging patterns of expectations. These strategies will enable public managers to proactively capture changes in CEPS and adjust service delivery accordingly.

Furthermore, embedding CEPS monitoring within accountability frameworks is crucial. Agencies should not only assess changes in citizen expectations regularly but also report back to the public on how these expectations have been incorporated into service improvements, thereby closing the accountability loop (Romzek and Dubnick, 1987). Additionally, while multiple types of CEPS have been identified and measured, there is still disagreement about how to accurately measure these expectations. Currently, widely used scales, such as the ACSI and SSNYCS, focus on traditional satisfaction and service quality assessments, but they often fail to adequately distinguish between the normative and predictive nature of CEPS. Research has shown that there is a significant difference between the impact of normative CEPS and predictive CEPS on citizen satisfaction. Normative expectations are closely correlated with the extent to which the service meets citizens' expectations, whereas predictive expectations tend to influence how citizens feel about the performance of the service. Distinguishing between these two types of expectations is crucial for understanding how citizens evaluate services and adjust their expectations accordingly. Confusing these two types can lead to measurement errors that may misinterpret assessments of policy effects (King and Wand, 2007). Therefore, we propose the following proposition:

Proposition 2: Measurement of CEPS requires a clear distinction between normative and predictive expectations, which have very different impacts on satisfaction and are crucial for the design of service evaluation instruments.

Proposition 3: It is essential to establish equivalence checks on CEPS measures. This requires more comparative studies of different countries and levels of government.

Specifically, we propose the following structured future directions for developing more accurate CEPS measurement tools.

First, future CEPS measurement should explicitly distinguish between normative expectations (what citizens believe *should* happen) and predictive expectations (what they anticipate *will* happen), while also accounting for the growing influence of technology use in service delivery. Hjortskov (2020a) gives a detailed discussion on how to measure normative and predictive expectations. Second, new measurement tools should adopt a mixed-methods approach, combining qualitative item generation (e.g., citizen interviews, focus groups) with rigorous quantitative validation (e.g., exploratory and confirmatory factor analyses) to ensure clarity of construction. Third, CEPS measures need to allow for regular updates and contextualization in realistic service scenarios (e.g., mobile governance or AI-based services). Finally, future scales should be validated across countries and services to establish measurement equivalence and enhance generalizability across different administrative settings. The development of such dynamic and context-sensitive instruments is crucial for measuring citizen expectations based on realistic scenarios.

Based on the research reviewed, there is a clear disconnect between the rationale for the emergence of CEPS in traditional and modern public services. In the traditional public service environment, CEPS formation relies on the basic quality and performance of the service. However, in the modern public service environment, CEPS is increasingly influenced by the integration of technology. Specifically, with the advent of the digital age, public expectations of public services have shifted from basic service satisfaction to a demand for efficient, convenient, and intelligent services. As a result, organizational technological adaptability and performance feedback have become key factors in shaping these expectations. Many studies recognize that modern public service providers must focus on the synergistic effects of technology and organizational performance to drive continuous improvement and innovation in public service systems by enhancing the public's service experience.

Proposition 4: In modern public service environments, attention to the joint effects of technology integration and organizational performance on CEPS is essential.

Our systematic analysis clearly shows that future research should bridge the knowledge gap between traditional and modern public services. Although some basic assumptions can be deduced from existing empirical studies, a deeper understanding of technological factors is necessary when assessing the overall effects of CEPS and digital transformation in the public sector. Theories of technology acceptance do not always directly predict potential effects; instead, they need to show how the technological environment shapes the impact of CEPS. Some critical areas of focus include the public's perception of technology transparency, the interpretability of algorithms, and their biases. Therefore, the final proposition presented in this study highlights its theoretical contributions:

Proposition 5: The results of CEPS in modern public service environments should be analyzed in the context of technology to make valid inferences about the transformational effects in the public sector.

This review of research shows that CEPS research has made significant strides forward. The definitions, types, antecedents, and consequences of expectations have been extensively studied. However, there are still areas that require further attention to enhance our understanding. Most notably, there is a lack of connection between CEPS and key topics in the public service environment, such as the relationship between co-production and CEPS. Additionally, how CEPS shapes citizens' attitudes and behavioral intentions in the digital age deserves more in-depth analysis. Finally, advancing causal inference through more experimental approaches could provide a more nuanced understanding of the critical role of CEPS in the public service environment.

This study also has important theoretical and public management implications. Specifically, CEPS is more than just an expectation of service performance; it embodies citizens' normative ideals of valued public outcomes and should be an important mechanism for guiding government action (Fukumoto and Bozeman, 2019, Moore, 2012). This perspective echoes the theory of public value proposed by Moore (2014), Bozeman (2019), and Meynhardt (2009), who emphasize that the goal of public management should be the creation of collective public value, not just the provision of efficient services. Unmet expectations of citizens may indicate a failure of systemic governance, as emphasized by the concept of 'public value failure' proposed by (Bozeman, 2002). There is a need for governments to align resource use and power with democratically expressed values through 'public value accounting' (Bozeman and Johnson, 2015). Thus, managing CEPS goes hand in hand with maintaining public legitimacy, trust, and cohesion.

Moreover, understanding the relationship between CEPS and public values highlights the strategic role of public managers: they must not only respond to citizens' needs but also actively shape and communicate expectations in a way that reinforces collective social goals (Meynhardt, 2019). This perspective suggests that CEPS management is critical to sustaining a vibrant public sphere and ensuring opportunities for progress, as argued by Bozeman and Johnson (2015). Therefore, future research should further explore CEPS as both a framework for assessing public value creation and as a diagnostic tool for identifying emerging public value failures (Meynhardt and Fröhlich, 2019). Particularly in digital governance environments, revealing the interplay between citizens' expectations, perceived public value, and government responsiveness could provide a possible avenue for advancing the theory and practice of public management.

Data availability

No datasets were generated or analysed during the current study

Notes

1 In CEPS studies, the concept of expectation (dis)confirmation is sometimes discussed alongside expectations. However, both subtractive (dis)confirmation (e.g., performance minus expectations) and perceived (dis)confirmation of expectations incorporate performance information (Van Ryzin, 2006, Poister and Thomas, 2011). In line with the research questions of this article, our analysis focuses on the antecedent variables of expectations, excluding those related to expectation (dis)confirmation.

2 We do not include disconfirmation as an outcome variable in our assessment because, in both subtractive disconfirmation and perceived disconfirmation, the performance used for comparison with expectations is either manipulated virtual information or derived from individuals' ambiguous performance evaluations based on past experiences. We are only interested in outcome variables that are generalized as a result of expectations.

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ZQ: Writing-review & editing, Conceptualization, Validation. BL: Methodology, Supervision, Proofread. YC: Conceptualization, Funding acquisition. CX: Conceptualization, Proofread. JZ: Data curation, Writing-original draft, Investigation.

Competing interests

The authors declare no competing interests.

Ethical approval

Human participants were not utilized in this study; hence, no ethical approval was needed by the author.

Informed consent

Informed consent was not required as the study did not involve human participants.

Additional information