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The Influences of Ambidexterity, New Public Management and Innovation on the Public Service Quality of Government Organizations

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ABSTRACT

This study assesses the influences of organizational ambidexterity and new public management (NPM) innovations on public service quality in the under-researched and changing context of the Arabian Peninsula Gulf States. The data used were obtained from government organizations in the Sultanate of Oman and were analyzed using structural equation modeling. The findings indicate that exploitation is associated with public service quality and this relationship is partially mediated by public service innovation. The results show an indirect relationship between NPM practices and service quality mediated by service innovation. Moreover, the relationship between exploration and service quality is fully mediated by service innovation. This study extends the existing research on ambidexterity in government organizations and contributes to the international public administration reform and innovation literature by examining the applicability of Western practices in changing societal and politico-administrative cultures.

Introduction

Government innovation scholars and policy makers are increasingly interested in understanding how innovations influence the service delivery quality of government organizations and agencies (Caillier, 2023; Gieske et al., 2019; Palm & Lilja, 2017; Smith & Umans, 2015; Van de Walle, 2016). Within this stream of research, scholars have examined the concept of ambidexterity, i.e. the organizational ability to combine innovation with maintaining and optimizing existing processes and services, and its relationship with public service outcomes (Bernier et al., 2015; Cannaerts et al., 2020; Kobarg et al., 2017; Page et al., 2021; Plimmer et al., 2017; Smith & Umans, 2015; Umans et al., 2020). Stimulated by reform movements, such as the New Public Management (NPM), public service

organizations across the world have adopted new ways of improving public service delivery (Hood, 1991; Lapuente & Van de Walle, 2020; Pollitt & Bouckaert, 2017; Pollitt & Dan, 2013; Tran et al., 2023). Despite a growing body of research on government innovation, public sector ambidexterity and NPM approaches in different settings, there is a need to better understand how practices originating in Western administrations influence public service quality in different national administrative cultures (Cinar et al., 2022; 2024; Criado et al., 2023; de Vries et al., 2016; Pollitt, 2013; Scott, 2021; Vassallo et al., 2023).

This study builds on this growing literature and responds to scholarly calls to assess the implementation of government innovations in novel and under-studied contexts (Cinar et al., 2022; Criado et al., 2023; van der Wal & Demircioglu, 2020). It examines the influences of organizational ambidexterity and NPM innovations on public service quality in the context of government organizations in the Arabian Peninsula Gulf States. We examine several explorative and exploitative activities and NPM practices as they relate to the service quality of government organizations in the Sultanate of Oman and ask the following research question: *How do exploration and exploitation (the components of organizational ambidexterity theory) and NPM-inspired innovations influence the public service quality of government organizations?*

We contribute to the international public administration reform and government innovation literature by providing empirical evidence on the influences of NPM and innovation practices on public service quality in the context of government service organizations in the Gulf States. The politico-administrative culture in the Gulf region is characterized by a dominant role of the governmental sector in society, formalized administrative arrangements and hierarchical, command and control bureaucratic processes (Al Hebsi & Wilkins, 2022; Al Wahshi, 2016; Alkaabi, 2020; Al-Zadjali, 2020; Biygautane, 2023; Dixon et al., 2018; Mansour, 2018). A study of NPM practices and innovations in this setting furthers public administration theory, as it reveals the extent to which Western concepts may be applicable in non-Western politico-administrative cultures. In this way, it enriches our understanding of government reform, state modernization and innovation theory more generally.

We regard NPM as a set of ideas and practices that stipulate how public sector organizations should be organized and managed to improve service innovation and quality, which originated in a select group of Anglo-Saxon nations during the late 1970s and 1980s (Hood, 1991; Lapsley & Miller, 2024). It has spread globally to various degrees over the past 40 years, leading to significant research on its possible universality. Public administration scholars have criticized NPM reforms extensively for their managerial stance, output orientation and general unsuitability for the public sector

(Diefenbach, 2009; Dunleavy et al., 2006). Dan et al. (2024) distinguished between four main types of critiques of NPM: conceptual, expectations--results disconnect, value based and reform-type specific. As is the case with complex governmental reforms and policies, the results of NPM practices are contradictory and paradoxical (Dan & Andrews, 2016; Hood & Dixon, 2015; Hood & Peters, 2004; Lapuente & Van de Walle, 2020; Pollitt & Dan, 2013), leading to a need for further research on whether NPM 'works' (Dan & Pollitt, 2015; Hood & Dixon, 2015; Lapsley & Miller, 2024). More recently, however, we observe a gradual reconsideration within public administration scholarship of the so-called 'NPM problem' (Dan et al., 2024), namely the idea that NPM is a problem rather than a possible solution to public sector challenges. More and more scholars appear to agree that NPM is not to be dismissed, at least not entirely or *a priori* (Lapsley & Miller, 2024; see also the special issue in *Public Management Review*, entitled *The New Public Management: Dead or Still Alive and Co-existing? State of Play at 40+*). Furthermore, despite scholarly critiques (Diefenbach, 2009; Drechsler, 2005; Dunleavy et al., 2006), NPM ideas and practices have endured and continue to form a fluid part of a larger *ensemble* of public administration and governance theory and practice (Dan, 2024; Dan et al., 2024; Lapsley & Miller, 2024; Pollitt, 2016; Torfing et al., 2020).

Scholars have debated the extent to which governments have converged toward a distinct NPM reform model (Funck & Karlsson, 2020; Hammerschmid et al., 2019; Pollitt, 2001). As part of this enduring academic discussion, the national context plays an important role in influencing the results of NPM-inspired innovations (Dan & Pollitt, 2015; Pollitt, 2013). This is particularly the case for developing countries that are undergoing a process of modernizing their institutions and governance arrangements (Brinkerhoff & Brinkerhoff, 2015). Previous research has documented that particularly in traditional and legalistic administrative systems, which are characteristic of the Gulf region generally and Oman specifically (Al Wahshi, 2016; Al-Zadjali, 2020; Dixon et al., 2018; Mansour, 2018), the organizational features of the public sector may hinder innovative behavior (Al-Noaimi et al., 2022; Borins, 2014; Lapuente & Van de Walle, 2020). Thus, there is a need to understand how well innovations developed in Western administrative systems perform in different national contexts, given the universal appeal and attractiveness of these innovations (Cinar et al., 2022; Mussagulova, 2021; Suzuki et al., 2020; van der Wal & Demircioglu, 2020).

Research context

Studying NPM reforms and government innovations extends to different parts of the world, including the Gulf region (Al Wahshi, 2016; Al-Zadjali, 2020; Joyce & Al Rasheed, 2017). Recent research has shown that reforms

in this region aim to improve administrative efficiency, human resource management practices, the quality of public service delivery and state--citizen interaction (Schomaker & Bauer, 2020). Administrative reforms in the Gulf states tend to converge toward global reform standards although from a relatively low level (Schomaker & Bauer, 2020). Existing research has found that the traditional culture of the public administration in the Arab Gulf region limits the development and use of public management competences and managerial autonomy, which impacts the ability to drive reforms forward (Biygautane, 2023; Al Wahshi, 2016).

One of the countries in this region that has experienced significant changes in public administration over the past years has been Oman. Oman is an Arab country located in the Arabian Peninsula Gulf region and is part of the Gulf Cooperation Council (a political and economic agreement signed in 1981 between Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and United Arab Emirates). Oman's public administration shares the organizational features of the Gulf region, and it faces similar administrative challenges (Biygautane, 2023; Common, 2014). The country has transitioned from an oil-dominated income generator into a diversified economy. Technological change has prompted the country to adopt new forms of media and digital technologies, as well as new services both in the private and the government sector (The Public Authority for Investment Promotion & Export Development, 2014). Oman ranks 69th among the 132 countries featured in the Global Innovation Index (GII) 2023, which ranks nations according to their innovation capabilities. The country's GII score has improved in recent years, from position 84th in 2020 to 69th in 2023 (Cornell University, INSEAD, & WIPO, 2023). Regionally, Oman ranks 10th among the eighteen nations in Northern Africa and Western Asia. Overall, however, Oman's innovation performance is insufficient considering its level of economic development (Cornell University, INSEAD, & WIPO, 2023).

Public service organizations in Oman are facing pressure to improve the quality of public service delivery (Alkaabi, 2020). The Omani governmental sector is perceived to be inflexible, bureaucratic and unprepared to successfully meet citizen demands for improved operations and services (Alkaabi, 2020). Omani citizens expect that the good service quality they receive from for-profit companies can also be provided by governmental agencies. Moreover, the need to deliver better public services has given rise to an increased demand for service innovation within the public sector.

Similar to other governments in the Gulf region, the Omani state has adopted Western-style public management practices as part of a broader government modernization agenda that includes both NPM and non-NPM initiatives. The business sector, which in Oman is perceived to be more dynamic, efficient, and quality-oriented, has significantly influenced the

type of administrative reforms adopted by the Omani government. The interest in emulating private sector practices has paved the way for the introduction of service innovations in the government sector. Oman's Research Council developed the National Innovation Strategy that aimed to foster a culture of innovation with the hope of changing the way in which public organizations function, interact with citizens and businesses and deliver services (The Research Council, 2017). Likewise, Oman Vision 2040 includes a governance and institutional performance pillar and a program for government modernization. The vision outlines three over-arching principles: 'comprehensive governance, effective oversight and efficient performance' (Government of Oman, 2021, p. 130). The vision's emphasis is on creating a flexible, innovative and future-oriented administrative system (Government of Oman, 2023). Its implementation is guided by a set of objectives and targets that resonate well with Western NPM-style concepts and practices: government decisions based on quantifiable data and evidence; effective and efficient governance of resources and projects; clear competitive criteria for filling leadership positions in the government sector and its affiliated institutions; high-quality government performance and services; an effective, forward-looking government sector regarding planning, organizing, monitoring and evaluating that promotes institutional effectiveness and performance (Government of Oman, 2023).

Theoretical framework and hypotheses

Organizational ambidexterity

Originally framed in the organizational learning literature (Rashman et al., 2009), ambidexterity is the ability to explore and exploit resources simultaneously (March, 1991). Exploration and exploitation are two different constructs in terms of application, values, and goals. Whereby exploration emphasizes the creation of new ideas that may potentially lead to innovation, exploitation is the improvement of existing resources or maximizing the utilization of scarce resources. March (1991, p. 103) wrote that exploration involves 'search, variation, experimentation, and discovery' while exploitation implies 'refinement, efficiency, selection, and implementation'. He further noted that 'maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival' (March, 1991, p. 71). Benner and Tushman (2003) observed that the organizations which emphasize exploitation while undermining exploration suffer from inertia and lack of dynamic development. Conversely, overemphasis on exploration over exploitation leads organizations to overspend on experimentation in potentially unfruitful ways (March, 1991). This is the reason why March (1991) suggested that organizations should balance exploration and exploitation activities to improve organizational performance.

The need to develop capabilities to improve innovation and quality in public organizations has led to the promotion of organizational ambidexterity within the public sector, emphasizing the need to balance exploration and exploitation activities (Bernier et al., 2015; Cannaerts et al., 2020; Gieske et al., 2019; Kobarg et al., 2017; Tran et al., 2023). Although most ambidexterity research has been conducted in business settings, there is a growing body of research on ambidexterity in public service organizations (Cannaerts et al., 2016; Choi & Chandler, 2015; Page et al., 2021; Plimmer et al., 2017; Smith & Umans, 2015; Umans et al., 2020). This research examined the antecedents and outcomes of ambidexterity, showing the need for public service organizations to develop ambidextrous capabilities to improve quality while using resources efficiently and effectively (Gieske et al., 2019; Page et al., 2021; Smith & Umans, 2015).

NPM

NPM is defined as a two-level phenomenon. At the higher level, it represents a general theory or doctrine to improve the public sector by importing business concepts and techniques, and at the lower level as a bundle of specific management concepts and practices (Pollitt & Dan, 2011). NPM reforms emphasize goal clarity, strategic managerial action, organizational flexibility and measurable performance (Hood, 1991; Hood & Dixon, 2015; Mauro et al., 2018; Tran et al., 2023). Building on the premise that the classical bureaucratic model is unfit to effectively address public sector challenges, NPM focuses on the need to provide public managers with greater responsibility to manage innovation and quality (Dan, 2024; Park, 2024; Pollitt & Bouckaert, 2017). NPM practices may enhance innovation and quality in public service organizations by emphasizing the requirement to focus on results and applying strategic planning principles to better understand and respond to citizen requests and service user needs (Lapuente & Van de Walle, 2020; Mohr et al., 2018). However, the functionality of NPM practices depends on the level of organizational maturity, an adequate degree of administrative capacity and the existence of political and administrative support mechanisms that can flexibly adapt NPM practices to match organizational requirements and stakeholder preferences (Dan, 2015; Dan & Pollitt, 2015; Lapsley & Miller, 2024).

Public service innovation

Public service innovation is defined in the literature in different ways, although there is agreement that a distinct attribute of innovation is its novelty to the adopting organization (Bugge & Bloch, 2016; Chen et al., 2020; Demircioglu, 2020; Osborne & Brown, 2011; Vassallo et al., 2023;

Wegrich, 2019). The novelty of innovation cuts across organizational arrangements and behavior and applies to services and goods as well as operational processes, organizational methods and communication with users and citizens (Bloch, 2011). Public service innovations can be both incremental and small scale, as well as transformative and large scale (Haug et al., 2023; Scott, 2021). Connecting the definition of innovation to the practice of public sector ambidexterity, Gieske et al. (2016, p. 3) noted that innovation entails 'the implementation of new policies, processes, technologies and services, in discontinuity with the past, whereas optimization concerns the improvement of existing policies, processes, technologies and services, in continuity with the past.'

The driving factors of innovation include the regulatory framework, political discourse and support, budgetary resources, innovation culture and the organizational capacity to embrace innovation (Al-Noaimi et al., 2022; Barrutia & Echebarria, 2019; de Vries et al., 2016). Demircioglu (2020) found that the organizational context (size, work location and type) and demographic characteristics have an impact on the implementation of innovations and found evidence that smaller organizations are more dynamic, entrepreneurial, and innovative than larger organizations. Innovation barriers include rigid organizational structures, challenges in managing risk uncertainties, limited management support and an emphasis on rhetoric instead of concrete action (Lidman, 2023; Vassallo et al., 2023). Moreover, lack of in-house innovators, shared innovation goals and incentives for innovation further constrain the adoption of innovative activities (Al-Noaimi et al., 2022; Arundel et al., 2019; Vassallo et al., 2023).

Public service quality

Service quality is defined as the users' overall evaluation of a service, including the supply of intangible value that satisfies user expectations and needs (Brysland & Curry, 2001). The quality of services is an important factor for improving public service performance and the interaction between public service delivery organizations and citizens (Caillier, 2023; Kobarg et al., 2017; Tran et al., 2023; Van de Walle, 2016). However, the attainment of service quality in public organizations is difficult because of the complexity of service provision, the requirement to respond to differing and dynamic citizen needs while allocating resources efficiently and effectively, setting priorities within budgetary and service type limits, and justifying the allocation of public resources to multiple stakeholders (Caillier, 2023; Nor et al., 2010).

Figure 1 Illustrates our conceptual model and hypotheses to which we now turn.
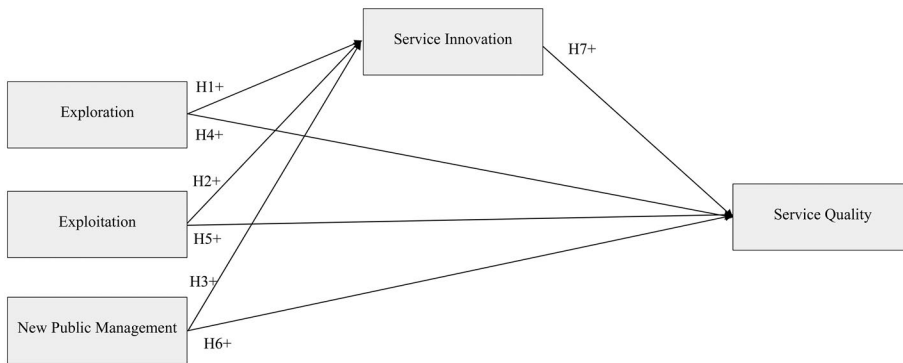
Figure 1. Proposed conceptual model.

Exploration, exploitation and public service innovation

Previous public sector ambidexterity research found that innovation is created in organizations which develop ambidextrous capabilities rather than in organizations that focus on one of the activities alone since ambidextrous governmental organizations are more responsive to both their internal and external environments and thus better positioned to improve public service quality (Bryson et al., 2008; Cannaerts et al., 2020; Gieske et al., 2019; Page et al., 2021). This leads us to propose that:

> **Hypothesis 1**. Exploration is positively related to public service innovation.

> **Hypothesis 2.** Exploitation is positively related to public service innovation.

NPM and public service innovation

Due to their reformist nature and critique of organizational arrangements, NPM practices act as a driver of innovation as they lead to the introduction of novel service delivery approaches and ways to engage with service users based on the customer paradigm (Dan, 2024; Ivana et al., 2019; Lapsley & Miller, 2024; Pollitt & Bouckaert, 2017). Although public administration scholars have criticized the customer orientation embedded in NPM due to its tendency to undermine a broad conception of public value and value creation processes (Osborne et al., 2022), the NPM literature has emphasized the role of NPM in driving an outward-oriented and user-focused approach to public service delivery (Dan, 2024; Dan, Lægreid & Špaček, 2024; Ivana et al., 2019). By focusing on measurable results instead of bureaucratic procedure and promoting greater managerial autonomy, NPM practices may stimulate innovative behavior and attitudes within the civil service (Pollitt & Dan, 2013; Verhoest et al., 2007). Organizational and individual incentives may lead public service delivery organizations to address risk aversion and be more receptive to change

and experimentation (Pollitt & Bouckaert, 2017; Vassallo et al., 2023; Windrum, 2008). Thus, we propose that:

Hypothesis 3. NPM is positively related to public service innovation.

Exploration, exploitation and public service quality

The creation of new public services that match user expectations are key to exploration while improving a current service by improving its efficiency reflects the tendency toward exploitation (Cannaerts et al., 2020; Page et al., 2021; Plimmer et al., 2017; Umans et al., 2020). Organizational ambidexterity can influence service quality through improvements in existing services, the creation of new services or changes in the delivery models of current offerings (Palm & Lilja, 2017; Smith & Umans, 2015). A balanced approach that incorporates both exploitation and exploration can lead public service organizations to deliver superior service quality (Cannaerts et al., 2016; Gieske et al., 2019; Page et al., 2021). Previous empirical research showed that the application of ambidexterity can support and enhance public service delivery by creating required adjustments to when and how much organizations should innovate while considering the risks posed by innovations (Gieske et al., 2019; Palm & Lilja, 2017). Smith and Umans (2015) found partial support for a positive relation between ambidexterity and NPM-type local government organizational forms and service delivery arrangements. Gieske et al. (2019) found that both exploitation and exploration contribute to public sector performance although optimizing had a stronger effect compared to explorative activities. Hence, we propose that:

Hypothesis 4. Exploration is positively related to public service quality.

Hypothesis 5. Exploitation is positively related to public service quality.

NPM and public service quality

Influenced by dynamic managerial and market practices, NPM emphasizes a results orientation designed to improve organizational performance and an outward orientation centered on understanding and proactively responding to user needs and expectations (Kakouris & Meliou, 2011; Lapuente & Van de Walle, 2020; Pollitt & Bouckaert, 2017). As the quality of service closely depends on how much it reflects user needs, the paradigmatic shift brought about by NPM thinking is expected to have important implications for the quality of public services (Agus et al., 2007; Dan, 2024; Pollitt, 1995). Thus, we propose that:

Hypothesis 6. NPM is positively related to public service quality.

Public service innovation and public service quality

Public service innovation research has documented a positive influence of innovative activity on public service quality and underlined the importance of building innovation capacity, know-how and capabilities to design and implement innovations effectively (Damanpour & Schneider, 2008; Gieske et al., 2019; Page et al., 2021; Pittaway & Montazemi, 2020). Page et al. (2021) examined the creation of collaborative exploration and exploitation processes and found a positive linkage with performance. Similarly, Gieske et al. (2019) found that innovation contributes to public service performance. Therefore, we propose that:

> **Hypothesis 7**. Public service innovation is positively related to public service quality.

Research methodology

Measures and NPM scale

The research questionnaire measures ambidexterity, NPM, service innovation and service quality. All the variables used measurement scales that were adopted or adapted from preexisting scales. However, we developed the NPM scale ourselves based on the elements of Pollitt (1995), which we will discuss later in this section. The organizational ambidexterity measurement scale comprises two sub-dimensions, namely exploration and exploitation that were adapted from a study conducted by Kortmann (2015). Service innovation was measured using items adapted from Grawe et al. (2009). The measures for service quality are based on the empirical study conducted by Plattfaut et al. (2015).

The measurement scales are illustrated in Appendix 1 (supplementary material). Several items were modified to be applicable to the public sector by shifting the focus from a market and private sector orientation to the public sector and citizen needs. The respondents were asked to indicate their level of agreement on a seven-point Likert scale that was anchored at 1 = strongly disagree and 7 = strongly agree.

The three prime stages suggested by Schwab (1980) were implemented to develop the new NPM scale that we created and used in this study. First, the Delphi technique was used to generate items from eight academic experts in public administration, and specifically NPM. This technique is a reiterative procedure and one of the most suitable research instruments to obtain expert knowledge on a particular phenomenon (Skulmoski et al., 2007). During the first round of the Delphi technique, the members recommended thirty items that were assigned to the core attributes of NPM and reviewed later by the same board of experts to assess content validity. In round two of the Delphi technique, twelve items of the NPM scale

were retained and eighteen were eliminated as they were considered repetitive and assessed less favorably by the experts.

One more item on performance measurement was removed as it was repetitive while the other eleven items were revisited and modified following the experts' suggestions. In round three, more items were modified and finalized based on feedback from participants. Moreover, the item 'increased privatization and outsourcing' was divided into three finalized items of scale, and public-private partnerships was further added as suggested by another scholar, resulting in a refined survey instrument containing 14 items at the conclusion of the three-round Delphi study.

Stage two of the scale development process was performed by conducting semi-structured interviews with five experienced practitioners working in the public sector in Oman. These practitioners were top-level managers with more than ten years of public management experience. As a result, three items were removed and another item was modified, leading to a NPM scale consisting of eleven items (Appendix 1, supplementary material). This procedure confirmed the understanding and readability of the items in the context of public organizations in Oman.

The final stage consisted of face and content validity with six academics in the field of public management followed by a pre-study to confirm the reliability of the survey items. The questionnaire was sent to one hundred individuals working at an operational unit (e.g., department or function) in the Omani government, and a total of forty-six individuals completed the survey. The pilot study results confirmed the consistency and internal reliability of the scales, which achieved Cronbach's alpha test results higher than 0.7 (Hair et al., 2014).

Sample and data collection

Participants were selected by listing all ministries that provide services to citizens and the community in Muscat, the capital of the Sultanate of Oman. First, we used ministry websites to identify the active operational and functional units and their responsible managers. Second, managers of these units were contacted by email or phone to explain the objective of the study and confirm their participation in the research. These managers are knowledgeable about and experienced in public administration in the Sultanate of Oman.

In total, 157 department or functional heads from twenty-two different government service organizations participated in the study. Therefore, the data analysis in this research was conducted at the department level. The data were collected using the questionnaire in a face-to-face setting at each manager's office. Although this method requires more time for data collection, this procedure enhances the response rate, ensuring the competency and knowledge of the key respondents in answering the survey questions.

Final sample descriptive

The study sample includes 119 (75.8%) responses from ministerial organizations, such as the Ministry of Civil Service, and 38 (24.2%) from non-ministerial organizations, e.g. the public authority for consumer protection. 88 (56.1%) of the managers work in an operational department, such as the planning department, 31 (19.7%) in a functional department and 38 (24.2%) in a citizen service department. 126 (80.3%) of the respondents are middle managers and directors, 21 (13.4%) are supervisors working in a lower management position while 10 respondents (6.4%) are general managers who have a senior management role. Table 1 highlights the descriptive statistics of the participants.

Common method bias

Common method bias exists if one factor explains most of the covariance among the measures during the exploratory factor analysis with unrotated factor solutions (Podsakoff et al., 2012). First, the highest variance accounted for a single factor in this study was 42.77% of the 65.49% explained variance using Harman's single factor criterion (Podsakoff et al., 2012; Podsakoff & Organ, 1986). Second, the correlations between constructs are below 0.90, and the highest value of variance inflation factor is below the threshold of 3.3, which provides additional support that common method bias is unlikely to be a problem in this study (Kock, 2015). Finally, the common latent factor was used to compare standardized loadings when the common factor is introduced to the original measurement model reflected by all the measured indicators and when this common factor is not present. The result indicates that the differences between the standardized loadings are lower than the cut criterion of $< .20$ (Podsakoff et al., 2003).

Analysis and results

Measurement model estimations

Confirmatory factor analysis (CFA) was performed to evaluate how well the measured variables represent the research constructs (Anderson &

Table 1. Descriptive statistics.

Variables	Variation	Count	Percentage
Organizational type	Ministerial	119	75.8%
	Non-ministerial	38	24.2%
Department type	Operational department	88	56.1%
	Functional department	31	19.7%
	Citizen service department	38	24.2%
Management level	Senior managers	10	6.4%
	Middle level managers	126	80.3%
	Supervisors	21	13.4%

Note: *N* (Sample size) = 157.

Gerbing, 1988; Gallagher et al., 2008). The initial CFA results indicate a mediocre model fit and suggest the exclusion of the items EXPLOR1, NPM3, NPM4, NPM5, NPM7 and SERVQUAL1 that have loading factors below the threshold of 0.6. Besides, the item NPM8 highly correlates with the service quality construct and was removed from further analysis. The final model provides strong goodness of fit indices (χ^2 = 326.3, d.f. = 235, p < .01; TLI = .95, CFI = .95; RMSEA = .050), and the values of the standardized factors' loading estimates are higher than 0.6 with statistical significance, and without any loadings above 1 or below −1 (see Table 2).

The global fit analysis was followed by local fit evaluating the data at a variable level, resolving the weakness of the global fit statistics that may fail to explain the association between certain pairs of observed variables (Goodboy & Kline, 2017). The result indicates that only the two pairs of items EXPLOR2 & EXPLOR3 and EXPLOR3 & EXPLOR4 have correlations of residuals above 0.1. However, most of the absolute correlations of residuals did not exceed 0.1, highlighting that the specification error is not a concern in this study (Goodboy & Kline, 2017).

Table 2. Results of the exploratory and confirmatory factor analysis, with the corresponding factor loadings and reliabilities.

Construct	Item	CFA Loading	AVE
Exploration	EXPLOR1	0.411	0.62
	EXPLOR2	0.684	
	EXPLOR3	0.884	
	EXPLOR4	0.788	
Exploitation New Public Management	EXPLOIT1	0.855	0.61
	EXPLOIT2	0.793	
	EXPLOIT3	0.818	
	EXPLOIT4	0.618	
	EXPLOIT5	0.741	
	NPM1	0.745	0.48
	NPM2	0.768	
	NPM3	0.228	
	NPM4	0.351	
	NPM5	0.529	
	NPM6	0.635	
	NPM7	0.506	
	NPM8	0.779	
	NPM9	0.622	
	NPM10	0.721	
	NPM11	0.633	
Service Innovation	SERVINNOV1	0.710	0.64
	SERVINNOV2	0.835	
	SERVINNOV3	0.858	
	SERVINNOV4	0.806	
	SERVINNOV5	0.787	
Service Quality	SERVQUAL1	0.568	0.58
	SERVQUAL2	0.696	
	SERVQUAL3	0.730	
	SERVQUAL4	0.809	
	SERVQUAL5	0.859	
	SERVQUAL6	0.717	

Table 3. Convergent and discriminant validity.

	Mean	Std. Deviation	α	CR	1	2	3	4	5
1. Exploration	5.79	1.08	.82	.83	*.62*				
2. Exploitation	6.25	.78	.86	.88	.22**	*.61*			
3. New public management	5.41	.87	.87	.87	.32**	.29**	*.48*		
4. Service innovation	5.72	.89	.89	.89	.29**	.42**	.48**	*.64*	
5. Service quality	5.99	.80	.86	.86	.12**	.36**	.30**	.42**	*.58*

Notes: CR = composite reliability; AVE = average variance extracted; figures in italics on the diagonal are the squared root of the average variance extracted; values below the diagonal are the correlations between the variables; ** Correlation is significant at the 0.01 level (two-tailed). *N* (Sample size) = 157.

Convergent and discriminant validity

Convergent validity refers to the common shared variance between the indicators of the same construct, and discriminant validity evaluates the construct's divergence and how it differs from others and not measuring the same thing (Gallagher et al., 2008). The values of the average variance extracted (AVE) were greater than 0.5, Cronbach's alpha and construct reliability (CR) above 0.7 indicates convergent validity (Anderson & Gerbing, 1988) (see Table 3). Discriminant validity is achieved if the squared root of AVE of any two constructs is higher than their squared correlation estimate. Table 3 shows that the square root of AVE of the five study constructs in the diagonal is greater than their squared correlations below the diagonal line (Fornell & Larcker, 1981). Thus, the research constructs achieve discriminant validity.

Hypotheses testing

To test the hypothesized paths, we estimated a structural model including the five latent variables using the AMOS software. The model explains 39% of the variance in service quality, and the goodness of fit indices (χ^2 = 418.6, d.f. = 235, $p < .01$; TLI = .90, CFI = .92; RMSEA = .071) are acceptable (Hair et al., 2014).

As shown in Table 4, the estimates of the standardized path coefficients support five of the seven hypothesized links. The findings of the path analysis indicate that exploration relates positively and significantly to service innovation ($\beta = 0.179$, *t*-value = 2.568, $p < .01$), exploitation relates positively and significantly to service innovation ($\beta = 0.474$, *t*-value = 5.774, $p < .001$), and NPM relates positively and significantly to service innovation ($\beta = 0.604$, *t*-value = 5.399, $p < .001$) Thus, H1, H2 and H3 are supported. The relationship between exploration and service quality ($\beta = -.134$, *t*-value = -1.752, $p = .080$) is not significant and H4 is not supported. However, the relationship between exploitation and service quality is significant ($\beta = .276$, *t*-value = 2.734, $p = .006$). Thus, H5 is supported. The relationship between NPM and service quality is not

Table 4. Hypothesis test results.

	Association	Standardized estimate	Standard error	P-values	Result
H1	Exploration to service innovation	.179	.073	0.010	Supported
H2	Exploitation to service innovation	.474	.121	<0.001	Supported
H3	New public management to service innovation	.604	.134	<0.001	Supported
H4	Exploration to service quality	−.134	.055	0.080	Not supported
H5	Exploitation to service quality	.276	.102	0.006	Supported
H6	New public management to service quality	.124	.100	0.307	Not supported
H7	Service innovation to service quality	.513	.102	<0.001	Supported

Note: N (Sample size) = 157.

significant ($\beta = 0.124$, t-value $= 1.022$, $p = .307$), and H6 is rejected. Finally, H7 is supported as service innovation relates positively and significantly to service quality ($\beta = 0.513$, t-value $= 3.452$, $p < .001$).

After the hypotheses testing, further analysis was conducted to assess the possible mediating role of the service innovation in the relationship between (1) exploration and service quality, (2) exploitation and service quality, and (3) NPM and service quality. The purpose of the mediation test is to determine how and why the variables are associated under a certain condition. The SEM bootstrap method was selected using 200 bootstrap samples and bias corrected percentile bootstrap with 95% confidence intervals was performed to obtain standardized effects (Cheung & Lau, 2007).

The results of the mediation tests (Table 5) indicate that the exploration standardized direct effect on service quality is not significant, but the standardized indirect effect is significant. Thus, service innovation fully mediates this relationship. The exploitation standardized direct and indirect effects on service quality are significant. Thus, service innovation partly mediates this relationship. The NPM standardized direct effect on service quality is not significant; however, the indirect effect is significant. Thus, service innovation fully mediates this relationship.

Following the mediation analysis, we tested an alternative model by re-specifying the proposed model with two direct relationships between NPM and exploration and exploitation (Kline, 2015). The result indicates that the Chi-square ($\chi^2 = 421.9$) of the alternative model has increased as compared to the proposed model ($\chi^2 = 418.6$). Besides, the goodness of fit indices including CFI, TLI and RMSEA did not improve. Thus, we have retained the initial proposed model (Weston et al., 2008).

Post-hoc analysis

Although we did not hypothesize the relationships between the interaction of exploration and exploitation and service innovation and service quality,

Table 5. Mediation analysis results.

	Standardized direct path coefficient (*Standard Errors*)	Standardized indirect path coefficient (*Standard Errors*)
Exploration → Service quality	− 0.13 (0.119), *p* = 0.058	0.09 (0.087), *p* = 0.024
Exploitation → Service quality	0.27 (0.131), *p* = 0.041	0.24 (0.083), *p* = 0.008
New public management → Service quality	0.12 (0.190), *p* = 0.565	0.31 (0.143), *p* = 0.008

previous researchers highlighted the benefit of their simultaneous use and explained that organizations pursuing both exploration and exploitation simultaneously can achieve higher performance. Thus, we included the interaction term of exploration and exploitation in the structural model to assess its relationships with service innovation and service quality. The results indicate that the relationship between the interaction term of exploration and exploitation and service innovation is not significant ($\beta = 0.017$, *t*-value = 0.253, *p* = .800). However, the relationship of the interaction term with service quality is positive and significant ($\beta = 0.152$, *t*-value = 2.018, *p* = .044). These findings underscore that the simultaneous utilization of exploration and exploitation activities contributes to the development of service quality and not service innovation. This result may be explained, on the one hand, by the readiness of the organization to balance between these two types of activities, and the structural gaps leading to barriers for information sharing and diffusion of innovation (Arundel et al., 2015; Cannaerts et al., 2016). On the other hand, a balanced implementation of exploration and exploitation activities ensures the quality of service, including the development of new services to respond to changing user needs, and the improvement of existing services to meet citizen and user demands in society (Gieske et al., 2019; Page et al., 2021; Plimmer et al., 2017).

Discussion

This study examined how the Western practices of exploitation and exploration and NPM innovations fare in the changing societal and politico-administrative culture of the Arabian Peninsula Gulf States. Based on existing theoretical assumptions, we hypothesized a positive influence of these practices on public service quality. The first two hypotheses tested the relationship between exploration and exploitation and service innovation. The results show that both variables have a positive relationship with service innovation. This finding indicates that exploration and exploitation generate a positive outcome on service innovation in the context of Oman's public service delivery organizations. This is consistent with the findings reported in other public sector ambidexterity studies conducted in European and North American organizational settings (Cannaerts et al., 2020; Gieske et al., 2019; Page et al., 2021).

The finding of the non-significant relationship between exploration and service quality might be explained by the observation that service providers

may prefer exploitation at the expense of exploration. Unlike businesses, public service organizations operate within stricter regulatory and budgetary frameworks and service mandates, which may lead them to resort to exploitation activities that illustrate immediate reliability and certainty. Exploitation can enhance the instrumental value of public services and improve the efficiency and predictability of service delivery, which is particularly relevant during austerity times and crises. Government organizations are also more prone than private-sector entities to experience innovation barriers, such as rigid organizational structures, resistance within the civil service and lack of shared innovation goals among the main stakeholders (Vassallo et al., 2023). These barriers constrain the degree of connectivity and engagement within the administrative system between the different entities and stakeholders, impacting the adoption of innovations, particularly those that involve collaborative arrangements.

Furthermore, our findings support an indirect relationship between exploration and service quality mediated by service innovation. The results show that service innovation partly mediates the relationship between exploitation and service quality. These findings reflect the results of Gieske et al. (2019) who found that the relationship between exploitation (resource optimization) and public service performance is stronger than between exploration (innovation) and performance. Yet, in line with a key finding of the growing public sector ambidexterity research, exploitation alone is not sufficient for fostering innovation. A focus on exploitation at the expense of exploration can limit the ability of public organizations to become responsive to citizen needs and perspectives, which can affect the service delivery quality over the medium and long term (Cannaerts et al., 2020; Gieske et al., 2019; Page et al., 2021; Plimmer et al., 2017; Umans et al., 2020). This is particularly the case in changing societies that increasingly demand a greater degree of public participation in government decision making and service delivery. Our findings further show a positive relationship between service innovation and service quality. Ensuring quality and superior service depends on the innovation activities of public organizations (Arundel et al., 2015; Borins, 2014; Lægreid et al., 2011). The organizations that succeed in using innovation and quality improvement approaches have the likelihood to improve their service delivery performance (Palm & Lilja, 2017) and the capacity to address societal challenges (Damanpour & Schneider, 2008).

The results of the third hypothesis show a significant and positive relationship between NPM and service innovation. This finding implies that public service organizations can become more innovative by adopting NPM practices. The service quality associated with innovation and learning plays an important role in the NPM model of service delivery as public service organizations across the world are confronted with a

growing demand to modernize and operate differently and more openly to improve user interaction (Caillier, 2023; Kinder, 2012; Van de Walle, 2016). The positive relation between NPM and service innovation is consistent with the outward orientation and user focus of the NPM model (Dan, 2024). The managerial model of NPM of letting managers manage (Norman, 2001) is associated with a greater potential for innovation assuming that two conditions are met. The first involves letting the public managers innovate, which highlights the role of managerial autonomy and flexibility that is necessary for creating and delivering innovative services. The second relates to creating the innovative skills of public managers, who are more willing to develop their competences and apply them in practice if they are encouraged and given the flexibility to do so (Boyne, 2004; Moynihan & Pandey, 2005). An inflexible, highly procedural and inward-looking bureaucratic administrative culture inhibits innovation, which may lead to a stagnant or even deteriorating service quality, impacting negatively on citizen satisfaction, quality of life and trust in governmental institutions (Al-Noaimi et al., 2022; Barrutia & Echebarria, 2019; Vassallo et al., 2023).

Our results further show an indirect relationship between NPM practices and service quality mediated by service innovation. NPM approaches to reform public service delivery can have several possible direct effects, both intended and unintended, desirable and unfavorable, depending on contextual factors that influence their implementation process and outcomes (Dan & Pollitt, 2015; Ferlie, 2017; Kakouris & Meliou, 2011). This may explain why H6 referring to the relationship between NPM and service quality is not supported by our empirical evidence. This finding thus points to the paradoxical results of performance-oriented practices (Hood & Dixon, 2015; Pollitt & Bouckaert, 2017; Pollitt & Dan, 2013; van Thiel & Leeuw, 2002). Contextual factors that define Oman's administrative culture may further explain this result. Formally, the Omani Government has set out to use NPM practices and achieve goals that closely reflect NPM thinking (Government of Oman, 2021, 2023). However, these practices, if not internalized, may contradict existing cultural values and behaviors (Alkaabi, 2020; Dixon et al., 2018; Joyce & Al Rasheed, 2017; Mansour, 2018). The NPM approaches of user-driven service quality, nonhierarchical organizational structures, participatory decision-making, accountability for results and flexible administrative action do not align well with Oman's traditional governmental structures, processes and cultural norms (Al Hebsi & Wilkins, 2022; Al Wahshi, 2016; Al-Zadjali, 2020). Similar to other nations in the Gulf region, Oman is defined by a dominant role of the government sector in society and formalized administrative arrangements, which influence the institutionalization of NPM practices and public sector innovations (Dixon et al., 2018).

Conclusion and implications for theory and practice

This research offers new insights on the influences of NPM practices and exploration and exploitation activities on public service quality. Using data from public service delivery organizations in Oman, our findings suggest that the knowledge acquired from service innovations and explorative and exploitative tasks relates to public service quality. This research contributes to the growing literature on organizational ambidexterity and the influences of exploration and exploitation on service innovation and quality in public service organizations (Cannaerts et al., 2020; Choi & Chandler, 2015; Gieske et al., 2019; Page et al., 2021; Plimmer et al., 2017; Smith & Umans, 2015; Umans et al., 2020). Our study highlights the significance of balancing exploration and exploitation to generate superior service quality through service innovation. This extends the previous literature on exploitation and exploration in the government sector, which was largely conducted in Western administrative cultures. The study provides new evidence from public service organizations in the under-studied region of the Gulf states, which is undergoing significant societal and administrative modernization (Al Hebsi & Wilkins, 2022; Al Wahshi, 2016; Al-Zadjali, 2020; Biygautane, 2023).

We found that NPM practices do not directly lead to better service quality; however, this relationship is mediated by service innovation. The NPM model of government modernization requires that the public sector should adopt practices that focus on new ways of organizing and delivering public services. Flexibility and responsiveness to service user needs can generate a useful and desirable balance between service innovation and quality. This study further contributes to the international public administration reform and innovation literature by showing that service innovation is a mechanism that public service organizations may use to foster improvements in service quality (Lapsley & Miller, 2024; Pollitt & Bouckaert, 2017). However, policy makers, public managers and public sector innovators need to be aware of the paradoxical nature of NPM practices (Hood & Dixon, 2015; Hood & Peters, 2004; Pollitt & Bouckaert, 2017). NPM approaches to service delivery can increase managerial flexibility and stimulate innovation, leading to improvements in the interaction between service providers and citizens/users. Nevertheless, managers need to monitor the implementation of these practices and assess their results in a holistic way, carefully considering possible unintended consequences and making required adjustments to mitigate the negative effects. The unintended consequences may include an overemphasis on measurable outputs and the instrumental values of economy and efficiency at the expense of a broad understanding of public value and democratic processes (Christensen & Lægreid, 2002; Dan, Lægreid & Špaček, 2024; Osborne

et al., 2022; Stoker, 2006). Moreover, NPM practices that emphasize quantifiable service quality may lead to stress, instability and resistance within the civil service due to performance pressure, organizational change and a reconsideration of the role of the state in public service delivery and society more generally (Pollitt & Bouckaert, 2017; van Thiel & Leeuw, 2002).

This study was conducted in certain public organizations in one country in the Gulf region. Governments in the Gulf region share similar cultural and politico-administrative characteristics and therefore our findings are applicable to similar countries. The data collected in a single country, however, limits generalization to other settings which have different governance arrangements and administrative cultures. Future studies should therefore extend this research to other national contexts. The operationalization of the NPM scale in our study is limited because of the deletion of several measurement items during the CFA analysis and the lower average variance extracted. Future research may replicate and validate the NPM scale that we developed in this study by considering the external service providers as a separate dimension of the NPM scale. This may provide a better understanding of the influence of internal and external NPM processes on service innovation and quality. Besides, endogeneity may be a problem in this study since several missing variables may influence service innovation and quality (Hill et al., 2021).

The cross-sectional nature of survey data collection presents the associations between the constructs at a certain point in time. Thus, the causal directions between exploitation, exploration, NPM, service innovation and quality cannot be generalized as a rule in this research. This limitation can be resolved with longitudinal studies, which might validate the directions of the relationships between the study variables. The sampling technique and sample size constitute a limitation. Future studies may employ comparative case studies and include various public organizations in different countries. Furthermore, the drivers of exploration and exploitation capabilities remain a gap in the public sector literature and future studies might explore the enablers of ambidexterity in service delivery agencies. Leadership skills may significantly influence the development and growth of public organizations. Future research may investigate the moderation effect of leadership skills on the relationship between NPM and public service innovation. Furthermore, the impact of organizational culture as a moderator represents an area for future research to better understand the association between NPM and public service innovation and their influences on public service quality.

Disclosure statement

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Data availability statement

The data that support the findings of this study are available from the authors upon reasonable request.

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