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The Effect of Innovation and Service Quality on Competitive Advantage with Dynamic Capability as a Moderating Variable (Empirical Study at BPS-Statistics Across Jawa Tengah Province)

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Abstract

This study examines the influence of innovation and service quality on competitive advantage with dynamic capabilities as a moderating variable at BPS-Statistics across Jawa Tengah Province. Using a quantitative approach with Partial Least Squares (PLS), the research involved all BPS work units to analyze the dynamics of competitive advantage in the public sector. Based on Resource-Based Theory and Dynamic Capabilities Theory, the study explores how organizational resources create competitive value. The findings indicate that both innovation and service quality have significant positive effects on competitive advantage. Innovation is reflected in web-based data services, interactive dashboards, and digital integration, while service quality appears in responsiveness, accuracy, accessibility, and user orientation. Dynamic capabilities also positively affect competitive advantage but do not moderate the relationships between innovation or service quality and competitive advantage, positioning it as a quasi-moderator. These results highlight the unique nature of public bureaucracy where innovation is top-down and service quality standardized, limiting adaptive flexibility. The study contributes to theory development and offers practical insights for strengthening autonomy and contextual innovation in public institutions.

Keywords: dynamic capabilities, competitive advantage, public sector innovation, service quality

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INTRODUCTION

Public organizations face demands to create added value and maintain competitive advantage in providing services to the public in an era of increasingly rapid globalization and digitalization. (Syapsan, 2019) Competitive advantage, although more commonly used in the private sector, is also relevant in the public sector, particularly in terms of service effectiveness, internal efficiency, and responsiveness to change and stakeholder needs. Organizational resources and capabilities, as well as external factors, are cited as sources of competitive advantage. (Widjajanti & Sugiyanto, 2023) Competitive advantage is a strategy that aims to provide benefits to an organization because it can provide more effective and efficient competitive strength. Competitive advantage can be achieved by maximizing the resources owned by the organization (Warraich et al., 2013). The success of an organization lies in its ability to have an advantage over its competitors. (Alfi Randra & Hasin, 2024)

Achieving competitive advantage is a strategic goal, and superior performance will automatically result from competitive advantage. Creating and maintaining competitive advantage is one way to achieve this goal (Sajeewa Wijetunge, 2016). Competitive advantage is achieved by implementing value creation strategies that are not implemented by competitors or through the implementation of the same strategy. The evolution of competitive advantage is a function of how an organization organizes and manages its activities to create value through those activities (Farida & Setiawan, 2022).

Innovation is a fundamental key to achieving competitive advantage in a dynamic business environment. Technological change and product diversity are two factors that significantly influence business development, making previously chosen superior strategies often inadequate, and the selection and determination of new strategies are necessary to drive companies to become more competitive (Farida & Setiawan, 2022). Innovation allows companies to continuously adapt to market changes and customer needs, as well as create products or services that are unique and differentiated from competitors. Research conducted (Eidizadeh et al., 2017) Research shows that innovation significantly influences competitive advantage. Another important aspect contributing to competitive advantage is service quality. High service quality can increase customer satisfaction, which in turn creates customer loyalty and strengthens a company's competitive position. Service quality encompasses various dimensions such as reliability, responsiveness, assurance, empathy, and tangibles. Service quality is considered an important tool for a company's struggle to differentiate itself from its competitors. By providing good service quality, the company will gain a sustainable competitive advantage. Efforts to provide quality service to consumers encourage consumers to use the company's products and services, thus creating a competitive advantage (Johnson & Sirikit, 2002).

Dynamic capabilities are a key element that enables organizations to remain relevant and competitive amidst increasingly rapid and complex external environmental changes, in addition to innovation and service quality. Dynamic capabilities, as expressed by (Johnson & Sirikit, 2002) Dynamic capabilities are a company's ability to integrate, build, and reconfigure internal and external resources to respond to environmental changes. Dynamic capabilities consist of three main dimensions: scanning (the ability to identify opportunities and threats in the external environment), sensing (the ability to quickly capitalize on opportunities), and reconfiguring (the ability to make internal changes to support adaptation). This concept is important for organizations, including government agencies such as the BPS-Statistics Indonesia, because their operational environments are increasingly influenced by globalization, technological developments, and changing societal needs. Dynamic capabilities as a moderating variable can strengthen the relationship between innovation and service quality towards competitive advantage. Organizations with strong dynamic capabilities are able to optimize the benefits of innovation and ensure superior service quality. This condition occurs because dynamic capabilities provide flexibility for organizations to continuously update and improve the value proposition offered to service users. Organizations with strong dynamic capabilities are able to manage complexity better because they have internal mechanisms that support organizational learning and continuous innovation. Sahwa dynamic capabilities not only contribute to increased operational efficiency but also create sustainable competitive advantage (Ferdinand et al., 2016).

The BPS-Statistics Indonesia, as the National Statistical Office (NSO), has the duty and responsibility to provide services through the provision of statistical data and information, based on Law Number 16 of 1997 concerning Statistics and Government Regulation Number 51 of 1999 concerning the Implementation of Statistics. As a government agency providing data, BPS faces challenges in competitive advantage, where data that should be available at BPS is often not obtained by data users in a timely manner or according to their needs. This can be caused by the time-consuming data processing process, limitations in accessibility or system interfaces, and a lack of innovation in data presentation and distribution. Improved innovation and service quality are needed for BPS to be able to compete amidst the increasing need for accurate and easily accessible data by users.

Previous studies report inconsistent findings: several studies found that innovation strengthens competitive advantage, while others found no significant effect. Similarly, research on service quality also shows contradictory results, with some findings indicating strong influence and others showing no effect (Ferdinand et al., 2016). These inconsistencies indicate that the relationship between innovation, service quality, and competitive advantage is not yet conclusive and requires further investigation, particularly in the public sector context. Moreover, limited research has examined these relationships within public sector organizations—particularly in bureaucratic environments where innovation tends to be top-down and service quality standardized through national procedures. Likewise, empirical studies on the moderating role of dynamic capabilities in government institutions are still scarce, creating a clear conceptual and empirical research gap.

Resource-Based Theory (RBT) states that competitive advantage is achieved through the utilization of valuable, rare, difficult to imitate, and irreplaceable internal organizational resources. Innovation and service quality are two intangible resources that play a crucial role in building competitive advantage. Conditions in the public sector that are full of regulations and rigid bureaucratic structures cause these two factors to not always provide optimal results directly. Therefore, this study integrates dynamic capabilities as a moderating variable to strengthen the relationship between innovation and service quality on competitive advantage at the Jawa Tengah Province Statistics Agency (BPS), with the hope of providing theoretical and practical contributions in developing competitive advantage strategies in the public sector. Based on empirical phenomena that occurred at the Jawa Tengah Province Statistics Agency and the identified research gap, this study aims to analyze the influence of innovation and service quality on competitive advantage with dynamic capabilities as a moderating variable. The study offers theoretical contributions by addressing inconsistencies in prior findings, extending the application of RBT and dynamic capability theory within the public sector, and providing empirical evidence from a government context that remains underrepresented in existing literature. Practically, the study provides insights for strengthening innovation practices, improving service quality, and enhancing adaptive capability in public institutions, particularly for national statistical agencies seeking to improve responsiveness and value creation (Skýpalová et al., 2024).

LITERATURE REVIEW AND HYPOTHESES

Resource-Based Theory and Dynamic Capabilities

Resource-Based Theory (RBT) emphasizes the importance of valuable, rare, difficult to imitate, and non-substitutable internal resources as the basis for competitive advantage (. In this context, innovation and service quality are seen as strategic resources capable of creating sustainable value. However, environmental dynamics require organizations to not only rely on static resources, but also develop dynamic capabilities to be able to adjust, update, and reconfigure resources according to market changes. Thus, the combination of RBT and dynamic capabilities forms a relevant theoretical framework for understanding organizational competitiveness (Barney & Hesterly, 2019).

Competitive Advantage

Competitive advantage refers to an organization's ability to provide superior value compared to competitors, whether through service differentiation, operational efficiency, or a positive institutional image. This advantage can only be sustained if the organization's competencies are difficult to imitate and relevant to public needs. In the context of the public sector, such as BPS, competitive advantage is demonstrated through accurate, fast, and technology-based statistical services. Such advantages not only enhance the organization's legitimacy but also strengthen its strategic position amidst increasingly complex societal demands (Bhandari et al., 2022).

Innovation

Innovation is seen as a crucial instrument for creating new value through products, services, and processes that differ from conventional practices. Innovation can be incremental, improving existing systems, or radical, resulting in breakthroughs. In public organizations, innovation extends beyond technology to encompass policy mechanisms, service governance, and the adoption of digitalization to address public needs. Appropriate innovation implementation enables organizations to build sustainable competitiveness by creating unique value that is difficult for competitors to replicate (Sweis et al., 2018).

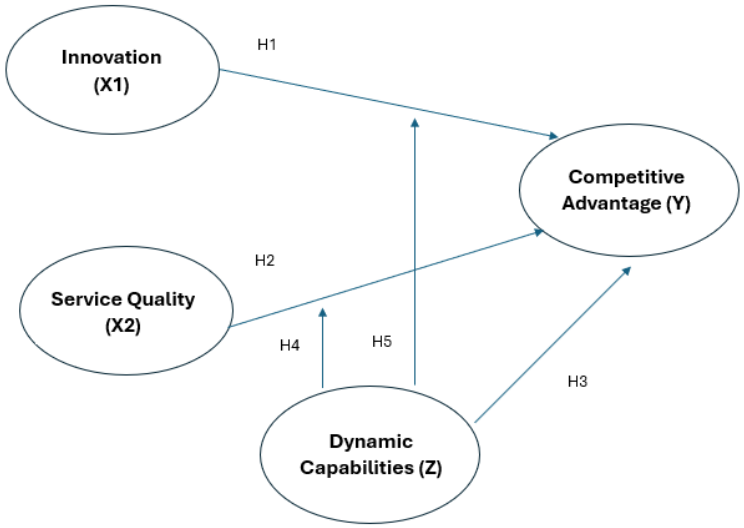
Quality of Service

Service quality reflects the extent to which an organization is able to meet or exceed customer expectations, which in the SERVQUAL model are measured through reliability, responsiveness, assurance, tangibility, and empathy. These dimensions determine both user satisfaction and loyalty. In the context of public organizations, service quality plays a crucial role in increasing public trust, strengthening the institution's image, and distinguishing itself from competitors or other data providers. Therefore, consistent and superior service quality serves as a strategic foundation for building sustainable competitive advantage .

Research Hypothesis

Based on the literature review, the relationships between variables can be formulated into research hypotheses. First, innovation is predicted to have a positive effect on competitive advantage (H1). Second, service quality is predicted to contribute significantly to competitive advantage (H2). Third, dynamic capabilities have a direct effect on the creation of competitive advantage (H3). Furthermore, dynamic capabilities are predicted to moderate the effect of innovation on competitive advantage (H4), as well as the relationship between service quality and competitive advantage (H5). This formulation demonstrates that the roles of innovation and service are inseparable from an organization's adaptive capacity in facing a dynamic environment (Karman & Savanevičienė, 2021).

Figure 1. Conceptual Framework



METHODS

Research Design

This study uses a quantitative approach with explanatory research, aiming to explore a relatively new phenomenon related to the influence of innovation and service quality on competitive advantage, with dynamic capabilities as a moderating variable. The study focuses on analyzing a

model based on Resource-Based Theory (RBT), which provides a theoretical foundation for understanding how organizational resources and capabilities can create sustainable competitive advantage.

Variables and Operationalization

This study uses four main constructs: innovation (X1) and service quality (X2) as independent variables, competitive advantage (Y) as dependent variable, and dynamic capabilities (Z) as moderating variable. Moderating variables were chosen to test their impact in clarifying the relationship between independent and dependent variables, where their presence is important to strengthen or weaken the relationship.

The operationalization of the research variables refers to definitions and indicators that have been tested in previous research.

Variables	Operational Definition	Indicator	
Competitive Advantage	How an organization provides value to its customers that is superior to its competitors	Y11	Conformity to customer expectations
		Y12	Operational Efficiency
		Y13	Differentiation
		Y14	Organizational image
		(Sajeewa Wijetunge, 2016)	
Innovation	Innovation is a useful change in technology or methodology that differs from conventional practice.	X11	New Idea Development
		X12	Application of Technology
		X13	Support for Innovation
		X14	Speed of Innovation Implementation
		(Syapsan, 2019)	
Quality of Service	Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy needs.	X21	Reliability
		X22	Responsiveness
		X23	Assurance
		X24	Tangible (*Tangibility*)
		X25	Empathy
		(Sweis et al., 2018)	
Dynamic Capabilities	The organization's ability to integrate, build, and reconfigure internal and external competencies to cope with a rapidly changing environment	Z11	Communication with external parties
		Z12	Training and competency development for employees
		Z13	Support for knowledge sharing
		Z14	Performance Evaluation
		(Karman & Savanevičienė, 2021)	

Population and Sample

The study population comprised all structural officials within the BPS-Statistics Indonesia at the provincial and regency/municipality levels throughout Jawa Tengah. With an organizational structure where each work unit has two structural officials, and one provincial work unit and 35 regency/municipality work units, the total population was 72. Given the relatively small population, this study employed a census technique, collecting data from the entire population without sampling.

Data collection technique

Data collection was conducted through a self-enumeration method using a structured questionnaire with closed-ended questions. The questionnaire was designed using a Likert Scale of 1-10 to measure respondents' responses, where 1 indicates "Strongly Disagree" and 10 indicates "Strongly Agree." Questionnaires were distributed both directly and electronically to all structural officials within the BPS throughout Jawa Tengah. The collected data were quantitative primary data in the form of respondents' opinions on the variables studied. The use of primary data was chosen because the source of information was obtained directly from respondents as the main data collectors.

Data Analysis Techniques

Descriptive Analysis

Descriptive statistical analysis is used to describe collected data without the intention of making generalizations. This analysis uses the frequency distribution of respondents' responses in the form of frequencies, percentages, valid percentages, and cumulative percentages for each variable studied.

Partial Least Square - Structural Equation Modeling (PLS-SEM)

This study uses PLS-SEM with the help of SmartPLS software version 3.0. The selection of PLS-SEM is based on several considerations: (1) the research is explanatory and predictive, (2) the number of samples is the same as the population and less than 100, (3) flexibility in managing models with reflective constructs, and (4) the ability to handle models with complex structural relationships including moderating variables.

PLS-SEM analysis consists of two evaluation stages:

1. **Evaluation of Measurement Model (Outer Model)**
   a. Convergent Validity Test: Loading factor value > 0.70 (or 0.50-0.60 for scale development)
   b. Average Variance Extracted (AVE)**:**AVE value > 0.50 for good convergent validity
   c. Discriminant Validity Test: Comparing the square root of AVE with the correlation between constructs, and cross loading analysis
2. **Reliability Test**
   Construct reliability was tested using Cronbach's Alpha and Composite Reliability with a threshold value of > 0.70.
3. **Structural Model Evaluation (Inner Model)**
   a. R-Square: Assess the predictive power of the model with criteria of 0.75 (strong), 0.50 (moderate), and 0.25 (weak)
   b. F-Square: Assess the goodness of fit of the model with the criteria of 0.02 (weak), 0.15 (medium), and 0.35 (large)
   c. Path Coefficient: Testing the significance of the influence between variables using the bootstrapping method

RESULT AND DISCUSSION

Respondent Characteristics

This study involved 72 respondents who were structural officials within the BPS-Statistics Jawa Tengah Province and Regencies/Municipality throughout Jawa Tengah, including the Head of Provincial BPS, Head of General Affairs, Head of Regency/Municipality BPS, and Head of General Affairs Subdivision of Regency/ Municipality. Based on gender distribution, male respondents

dominated with a percentage of 70.83% (51 people), while female respondents were 29.17% (21 people). The dominance of male respondents reflects the gender composition within the BPS structural officials environment in Jawa Tengah Province, which in reality is still filled by more male employees, especially in echelon structural positions. In terms of educational level, the majority of respondents (69.44% or 50 people) had completed further higher education in master's (S2) or doctoral (S3) programs, while 30.56% (22 people) had D4/S1 education. This high level of education reflects intellectual capacity relevant to the demands of strategic roles in driving innovation, improving service quality, and managing the dynamic capabilities of the organization.

Table 2. Respondent Data Based on Gender

No	Gender	Amount	Percentage (%)
1	Man	51	70.83
2	Woman	21	29.17
Amount		72	100.00

Table 3. Respondent Data Based on Education Level

No	Education	Amount	Percentage (%)
1	D4/ S1	22	30.56
2	Masters/Doctoral Degree	50	69.44
Amount		72	100.00

Descriptive Analysis of Research Variables

Respondents' Perceptions of Innovation

The analysis results show that respondents' perceptions of innovation within BPS are high, with an average score of 7.79 (range 7.00-10.00). Respondents gave the highest rating to the aspect of technology application in work processes, with a score of 7.46, indicating that digitalization and automation are already quite felt by employees. Other items such as providing opportunities to develop new ideas (7.39), support for innovation (7.33), and speed of innovation implementation (7.31) also received high ratings. Based on the analysis of open-ended responses, the majority of respondents positively assessed the innovations carried out by BPS, especially in the development and utilization of digital applications to support work activities and statistical services.

Respondents' Perceptions of Service Quality

The service quality variable obtained an average score of 7.79, indicating a high category. Respondents gave the highest rating to the aspect of organizational attention to specific customer needs (7.89), reflecting that BPS is good at understanding the unique needs of service users and is able to provide personalized or context-appropriate services. Physical facilities for providing services available within the organizational unit also obtained a high score (7.83), indicating that the facilities and infrastructure are considered adequate. Other aspects such as timeliness of service completion (7.75), employee knowledge and skills (7.74), and the provision of easily accessible communication channels (7.72) are in the good category but relatively lower.

Respondents' Perceptions of Dynamic Capabilities

Dynamic capabilities received an average score of 7.40, categorized as high. The highest score was given to the aspect of providing adequate training/competency development to employees (7.46), indicating that BPS actively equips employees with relevant competencies to face change and challenges. Organizational support for knowledge sharing (7.43) indicates a collaborative culture that supports information exchange. Communication with external stakeholders and periodic performance evaluations each received a score of 7.36, indicating that two-way communication with external parties has been implemented and the organization conducts systematic performance assessments.

Respondents' Perceptions of Competitive Advantage

The competitive advantage variable showed the highest average value of 9.07, categorized as high. Respondents gave the highest rating to product or service aspects that meet or exceed customer expectations, indicating employee confidence that BPS products/services have met or even exceeded user expectations, which is a strong foundation for competitive advantage.

Evaluation of Measurement Model

Reliability and Validity Test

The results of the reliability test showed that all constructs met the criteria with a Cronbach's Alpha value above 0.70 and a Composite Reliability value above 0.90. The highest value was obtained by the Service Quality variable (Cronbach's Alpha = 0.949; CR = 0.960), followed by Competitive Advantage (0.948; 0.962), Innovation (0.916; 0.941), and Dynamic Capabilities (0.891; 0.924). The convergent validity test showed that all226ariable226has an outer loading above 0.70, with the highest value at226ariable226Y12 (0.952) and the lowest on Z12 (0.839). The Average Variance Extracted (AVE) values of all226The variable is above 0.50, with the highest Competitive Advantage (0.864) and the lowest Dynamic Capabilities (0.753).

Table 4. Internal Consistency Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Innovation	0.916	0.921	0.941	0.801
Quality of Service	0.949	0.968	0.960	0.829
Dynamic Capabilities	0.891	0.896	0.924	0.753
Competitive Advantage	0.948	0.949	0.962	0.864

Structural Model Evaluation

The R-Square value for the Competitive Advantage variable is 0.535 (R-Square Adjusted = 0.500), indicating that 53.5% of the variation in competitive advantage can be explained by the variables of innovation, service quality, and dynamic capabilities. According to Hair et al.'s (2017) criteria, this value is in the moderate category with fairly good predictive ability. The effect size (f^2) shows that Dynamic Capabilities have a large influence (0.439), Innovation has a medium influence (0.198), and Service Quality has a small influence (0.128) on Competitive Advantage. The Q^2 predictive relevance value of 0.446 indicates that the model has strong predictive ability for the competitive advantage variable. The multicollinearity test shows no multicollinearity problem with VIF values of all variables below 5 (Innovation = 1.073; Service Quality = 1.059; Dynamic Capabilities = 1.153).

Table 5. R-Square Value Results

	R Square	R Square Adjusted
Competitive Advantage	0.535	0.500

Table 6. Results of Q^2 Predictive Relevance

	SSO	SSE	Q^2 (=1-SSE/SSO)
X1 Innovation	288,000	288,000	
X2 Service			

Quality	360,000	360,000	
Y Competitive Advantage	288,000	159,557	0.446
Z Dynamic Capabilities	288,000	288,000	

Hypothesis Testing Results

Based on the results of path coefficients and bootstrapping, the following structural equation was obtained:

$Y = 0.314X_1 + 0.251X_2 + 0.485Z - 0.110(X_1 \times Z) - 0.112(X_2 \times Z)$

Direct Hypothesis Testing

1. Hypothesis 1: The Effect of Innovation on Competitive AdvantageThe analysis results show that innovation has a positive and significant effect on competitive advantage with a path coefficient of 0.314, a t-statistic of 3.880 (> 1.96), and a p-value of 0.000 (< 0.05). Hypothesis 1 is accepted.
2. Hypothesis 2: The Effect of Service Quality on Competitive AdvantageService quality has a positive and significant effect on competitive advantage with a path coefficient of 0.251, a t-statistic of 2.250 (> 1.96), and a p-value of 0.025 (< 0.05). Hypothesis 2 is accepted.
3. Hypothesis 3: The Effect of Dynamic Capabilities on Competitive AdvantageDynamic capabilities showed the greatest influence with a path coefficient of 0.485, a t-statistic of 6.538 (> 1.96), and a p-value of 0.000 (< 0.05). Hypothesis 3 was accepted.

Moderation Hypothesis Testing

1. Hypothesis 4: Moderation of Dynamic Capabilities on the Innovation-Competitive Advantage RelationshipThe results showed a path coefficient of -0.110, a t-statistic of 1.120 (<1.96), and a p-value of 0.263 (>0.05). Hypothesis 4 was rejected, indicating that dynamic capabilities do not significantly moderate the relationship between innovation and competitive advantage.
2. Hypothesis 5: Moderation of Dynamic Capabilities on the Service Quality-Competitive Advantage RelationshipThe results show a path coefficient of -0.112, a t-statistic of 0.651 (<1.96), and a p-value of 0.516 (>0.05). Hypothesis 5 is rejected, indicating that dynamic capabilities do not significantly moderate the relationship between service quality and competitive advantage.

DISCUSSION

This study analyzes the influence of innovation and service quality on competitive advantage, moderated by dynamic capabilities, at the BPS-Statistics Indonesia in Jawa Tengah Province using the Partial Least Square (PLS) technique. The findings contribute to strengthening the understanding of competitive advantage in public-sector statistical institutions.(Suryani et al. 2024).

The Impact of Innovation on Competitive Advantage

The research confirms that innovation has a positive and significant effect on competitive advantage. Innovation, as an intangible VRIN resource, strengthens BPS's ability to deliver adaptive and value-added services. In this study, innovation is primarily reflected through digital initiatives such as web-based data services, interactive dashboards, and integration with national platforms—representing concrete forms of service differentiation. Content analysis shows that keywords such as "application," "online-based," and "service" indicate innovation embedded in both digital products and work processes.

These findings show that BPS innovations are driven by external pressures—digital transformation, bureaucratic reform, and user demands—confirming innovation as a strategic pillar for enhancing competitive advantage in public service organizations. This aligns with (E. Suryani et

al. 2024),), who emphasize innovation as a driver of organizational value creation.

The Influence of Service Quality on Competitive Advantage

Service quality also has a positive and significant impact on competitive advantage. At BPS, service quality is reflected through speed of service, accuracy of data, ease of access, and responsiveness to user needs—elements that shape user trust and institutional reputation. Respondents emphasize easy access to data, comfortable service areas, and fast responses as key strengths. At BPS, service quality is operationalized through several main dimensions: (1) speed of service and response to data requests, (2) accuracy and relevance of statistical data, (3) ease of access to services and data, and (4) responsiveness to user needs; elements that shape user trust and institutional reputation. Respondents emphasize easy access to data, comfortable service areas, and fast responses as key strengths.

The institution's ability to maintain strong service quality is supported by standardized SOPs, competent human resources, integrated information systems, and regular service evaluations. Beyond these structural factors, adaptability in addressing evolving user needs differentiates BPS in a competitive public service environment. These findings align with prior studies emphasizing that high-quality public services enhance institutional image, trust, and user loyalty, making service quality not only a performance measure but also a strategic driver of competitive advantage.

These findings are consistent with prior studies (Syapsan, 2019; Sajeewa Wijetunge, 2016; Sweis et al., 2018; Ferdinand et al., 2016), which emphasize that service quality is a critical determinant of institutional competitive value.

The Influence of Dynamic Capabilities on Competitive Advantage

Dynamic capabilities were found to have a positive and significant effect on competitive advantage. This indicates BPS's ability to adapt to regulatory changes, digital service demands, and policy shifts through coordination, continuous learning, knowledge sharing, and routine evaluations. Activities such as technical training, coordination meetings, and knowledge-sharing forums demonstrate learning and adaptation practices within BPS.

Although structural constraints such as rigid regulations, budget cycles, and hierarchical decision-making, limit flexibility, the presence of dynamic capabilities still enhances organizational adaptability and contributes to competitive advantage. These findings align with (Lee & Yoo, 2019) dan (Karman & Savanevičienė, 2021), who highlights dynamic capabilities as a foundation for sustainable competitiveness. Thus, dynamic capabilities have proven to be a crucial lever for BPS's institutional excellence in facing the digital era and increasingly complex demands for public services.

The Moderating Role of Dynamic Capabilities: Findings and Theoretical Implications
Moderation in the Innovation-Competitive Advantage Relationship

The moderation test shows that dynamic capabilities do not significantly strengthen or weaken the effect of innovation on competitive advantage. Although dynamic capabilities have a strong direct influence on competitive advantage, their interaction with innovation is statistically insignificant, placing them in the category of a quasi-moderator. This indicates that the innovative resources within BPS already contribute directly to competitive advantage without requiring reinforcement from adaptive capabilities, particularly because innovation in the public sector is often driven by structural reforms and central directives rather than internal organizational dynamics.

This non-significant moderation is strongly linked to the top-down nature of innovation within BPS. Applications such as the official BPS website, KIPAPP, and INDAH are centrally developed and applied uniformly across all regional units, limiting opportunities for contextual or locally driven adaptation. Respondent inputs also show that innovation typically follows national systems rather than emerging organically from local units. These findings differ from private-sector studies (e.g., Eidizadeh et al., 2017), where flexible structures allow dynamic capabilities to amplify

innovation outcomes. Thus, the moderating role of dynamic capabilities is not universal and is constrained by bureaucratic structures, even though dynamic capabilities remain important as a direct driver of competitive advantage.

Moderation in the Relationship between Service Quality and Competitive Advantage

The moderation test shows that dynamic capabilities do not significantly influence the relationship between service quality and competitive advantage. Although they have a strong direct effect on competitive advantage, dynamic capabilities do not strengthen or weaken the impact of service quality, placing them as a quasi-moderator. This result reflects the nature of BPS as a public bureaucracy, where service delivery is governed by national SOPs, fixed service flows, and centralized oversight, leaving limited room for unit-level adaptation. Open-ended responses also indicate that service practices largely follow top-down procedures, restricting the practical use of dynamic capabilities to modify or innovate service approaches.

From the Resource-Based Theory (RBT) perspective, service quality can still enhance competitive advantage even without support from dynamic capabilities, as long as it is implemented consistently and reliably. This helps explain the insignificant moderating effect, which contrasts with findings in more flexible private-sector contexts (e.g., Lee & Yoo, 2019) where dynamic capabilities reinforce service quality outcomes. In BPS, structural rigidity and dependence on central policies limit the adaptive role of dynamic capabilities. Thus, while dynamic capabilities remain an important direct driver of competitive advantage, their moderating function is not realized in bureaucratic settings with hierarchical decision-making and restricted operational autonomy.

CONCLUSION AND SUGGESTION

CONCLUSION

This study empirically confirms that innovation, service quality, and dynamic capabilities significantly influence the competitive advantage of BPS-Statistics Indonesia in Jawa Tengah Province. Among the three, dynamic capabilities emerge as the strongest predictor, reflecting the organization's ability to adapt to regulatory changes, digitalization demands, and data transparency requirements through coordination, organizational learning, knowledge transformation, and continuous evaluation. These findings reinforce the Resource-Based Theory (RBT), positioning dynamic capabilities as a strategic intangible asset for sustaining competitiveness in public-sector bureaucracies.

Innovation and service quality also show significant effects on competitive advantage, indicating that higher levels of technological development, consistent service standards, and user-oriented responsiveness enhance institutional competitiveness. However, dynamic capabilities do not significantly moderate the effects of innovation or service quality. This suggests that although dynamic capabilities strengthen performance directly, they do not enhance the impact of top-down innovations or standardized services within the rigid, hierarchical structure of public bureaucracy. The findings expand the theoretical discussion by demonstrating that the moderating function of dynamic capabilities is context-dependent, varying across institutional environments and decision-making systems.

Overall, this study addresses the initial research problem, fills the identified research gap, and contributes a contextualized RBT-based model that explains how internal capabilities shape competitive advantage in public organizations.

SUGGESTION

In practical terms, BPS should strengthen its bottom-up innovation mechanisms by providing regional work units greater autonomy to design context-specific initiatives rather than relying solely on top-down directives. Enhancing dynamic capabilities requires promoting a stronger learning culture, enabling faster and more flexible decision-making, and establishing reward systems that encourage adaptive behavior and knowledge sharing.

To improve service quality as a strategic driver, BPS needs continuous investment in human resource competencies, integrated service information systems, and routine evaluations that capture diverse user needs, including accessibility and responsiveness. Integrating a hybrid model—combining national standardization with local customization—will allow innovation, service quality, and dynamic capabilities to work synergistically in strengthening institutional competitiveness.

For future research, scholars are encouraged to adopt data triangulation and field observations to validate these findings and capture real-time organizational dynamics that may not be reflected through survey data alone. Expanding the model by incorporating external environmental factors or comparative studies across different public institutions may also provide deeper theoretical insights into how competitive advantage develops in government bureaucracies.

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