

Chuyển đổi số trong hành chính công ở Việt Nam: nghiên cứu trường hợp tỉnh Bình Định cải thiện chỉ số PAPI từ 2020 đến hiện nay

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TÓM TẮT

Chính quyền tỉnh Bình Định đã có những bước tiến đáng kể trong việc thực hiện chuyển đổi số, với trọng tâm là nâng cao tính hiệu quả, tính minh bạch và sự hài lòng của người dân. Trong nghiên cứu này, chúng tôi cung cấp thông tin về những nỗ lực của tỉnh nhằm cải thiện Chỉ số PAPI từ năm 2020 đến nay thông qua việc triển khai các giải pháp đa dạng trên nhiều khía cạnh khác nhau. Với việc sử dụng tiềm năng của các nền tảng điện tử kỹ thuật số, mạng xã hội, và các công cụ kết nối người dân, tỉnh Bình Định đã hợp lý hóa một cách thành công các quy trình hành chính, tối ưu hóa việc cung cấp dịch vụ và thúc đẩy trách nhiệm giải trình cao hơn. Nghiên cứu này đưa ra những dẫn chứng thực tiễn về các hoạt động cải thiện đáng chú ý, chẳng hạn như nâng cao khả năng tiếp cận các dịch vụ công của người dân, khả năng đáp ứng và tính minh bạch của chính quyền tỉnh Bình Định, được thể hiện qua dữ liệu khảo sát, báo cáo kết quả PAPI qua từng năm. Từ những thông tin có giá trị thực tiễn của tỉnh Bình Định, nghiên cứu này sẽ cung cấp những kinh nghiệm quý giá cho các tỉnh thành khác đang tìm cách khai thác tiềm năng của công nghệ kỹ thuật số để tăng cường quản trị trong lĩnh vực hành chính công. Tỉnh Bình Định trong nghiên cứu này như là một ví dụ điển hình, minh họa cho sức mạnh của chuyển đổi số trong lĩnh vực quản trị hành chính công.

Từ khóa: Tỉnh Bình Định, chuyển đổi số, chỉ số PAPI, hành chính công ở Việt Nam.

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Digital transformation in public administration in Vietnam: a case of Binh Dinh province's improvement of PAPI index from 2020 to the present

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ABSTRACT

The government of Binh Dinh province has made significant progress in implementing digital transformation, focusing on improving efficiency, transparency, and people's satisfaction. This study provides information on the province's efforts to improve the PAPI Index from 2020 to the present by implementing various solutions across different aspects. Binh Dinh province has successfully streamlined administrative processes, optimised service delivery, and promoted greater accountability by utilising digital electronic platforms, social networks, and tools to connect people. The study presents practical evidence of notable improvement activities, such as enhancing people's access to public services and increasing the responsiveness and transparency of the Binh Dinh provincial government, as indicated by survey data and annual PAPI results. By sharing valuable information from the experience of Binh Dinh province, this study aims to provide valuable insights for other provinces and cities seeking to leverage the potential of digital technology to enhance governance in the field of public administration. Binh Dinh province, in this study, serves as a typical example that demonstrates the impact of digital transformation in public administration.

Keywords: *Binh Dinh province, digital transformation, PAPI index, public administration in Vietnam.*

1. INTRODUCTION

Binh Dinh province, one of the five provinces in the critical economic region of Central Vietnam, has a favourable geographical location and many advantageous factors in attracting investment.¹ It has emerged as a beacon of progressive governance in the region. The province has embarked on a remarkable digital transformation journey in recent years, driven by a vision to enhance administrative efficiency, transparency, and citizen satisfaction. This introduction provides an overview of the transformative

impact of digital initiatives on the province's governance landscape, with a particular focus on improving the PAPI from 2020 to the present. As digital technologies increasingly revolutionise governance worldwide,² Binh Dinh Province sets a noteworthy example of proactive adaptation. The integration of digital tools and platforms into administrative processes has streamlined operations and fostered a more inclusive and responsive government.³ This introduction highlights the pivotal role of digital transformation in modern governance and

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underscores the significance of examining Binh Dinh Province's experience as a case study.

The purpose of this article is to provide a comprehensive analysis of Binh Dinh Province's digital transformation journey and its tangible impact on governance outcomes, as evidenced by improvements in the PAPI index. By delving into the province's results of the PAPI Index and highlighted implementations, this article aims to offer valuable insights for policymakers, practitioners, and scholars interested in leveraging digital technologies for governance enhancement. This article seeks to highlight the transformative potential of digital governance through a structured exploration of Binh Dinh Province's digital initiatives and their correlation with improvements in the PAPI index. By examining the results of PAPI indexes, combined with descriptions of outstanding activities of Binh Dinh province from 2020-2023, this study contributes to a deeper understanding of the intricacies of harnessing digital technologies for effective governance.

Therefore, this introduction sets the stage for a detailed examination of Binh Dinh Province's journey towards digital governance excellence, emphasising the global implications for governance practices. As digital transformation continues to shape the future of governance,⁴ regions like Binh Dinh Province's experiences serve as invaluable sources of knowledge and inspiration for policymakers and practitioners alike.

2. LITERATURE REVIEW

2.1. Definitions of digital transformation

Digital transformation refers to the strategic and customer-centric changes in organisations driven by contemporary information and communication technologies, aiming to enhance organisational performance and competitiveness through new business models.⁵ It is a business transformation fueled by emerging technologies, offering growth opportunities and cost savings.⁶ The core of digital transformation lies in the

convergence of key technologies like Cloud Computing, Big Data, the Internet of Things, and Artificial Intelligence, which impact various sectors and drive innovation and disruption.^{7,8} A comprehensive framework for digital transformation includes considerations of societal impact and evolution over time and 23 categorised drivers termed “digital transformation interactions”.⁹ Ultimately, digital transformation involves a holistic approach towards implementing new methods to adapt to the digital economy's competitive landscape and technological advancements.

From these arguments, digital transformation in governance refers to the strategic integration of digital technologies and innovative processes to enhance administrative efficiency,¹⁰ service delivery,¹¹ and citizen engagement within governmental entities.¹² It involves reimagining and restructuring traditional bureaucratic systems to leverage the power of digital tools and data-driven insights.¹³ This shift extends beyond technological adoption and fundamentally reevaluates organisational culture, workflows, and stakeholder relationships.

Digital transformation manifests in various forms, including the digitisation of administrative processes, the development of e-governance platforms, and the implementation of data analytics for evidence-based decision-making.¹⁴ These initiatives aim to streamline bureaucratic procedures, reduce administrative burdens, and improve the overall quality of public services.¹⁵ Furthermore, digital transformation facilitates greater transparency and accountability by enabling real-time access to government information and fostering increased citizen participation in decision-making processes.¹³ One of the most significant aspects of digital transformation in governance is its transformative impact on citizen-government interactions.¹⁶ By leveraging digital channels and citizen-centric platforms, governments can enhance the accessibility and responsiveness of public services, thereby improving the

overall citizen experience.¹⁷ Moreover, digital transformation empowers citizens to actively engage with government agencies, provide feedback, and participate in co-creation initiatives, fostering a more inclusive and participatory governance model.¹⁸

Digital transformation in governance represents a paradigm shift towards a more agile, efficient, and citizen-centric approach to public administration. By harnessing the full potential of digital technologies, governments can overcome traditional bureaucratic barriers, enhance service delivery, and foster greater trust and accountability in public institutions.¹⁹ However, realising the full benefits of digital transformation requires a concerted effort to address challenges,²⁰ such as digital literacy, infrastructure constraints, and privacy concerns, while fostering a culture of innovation and collaboration within governmental organisations.

2.2. Definitions of e-government

Governments worldwide are transforming profoundly in the digital age, transitioning from traditional bureaucratic models to more agile, citizen-centric approaches enabled by electronic government or e-government. At the heart of this transformation lie several key characteristics distinguishing e-government from its traditional counterparts, reshaping the landscape of public administration and service delivery. That is the reason why the concept of e-government was born.

E-government, or electronic governance, encompasses utilising information and communication technologies in public administration.^{21,22} It involves the digital transformation of government operations to enhance service delivery, transparency, efficiency, and public engagement.^{23,24} The concept of e-government is broad, encompassing interactions between the government, citizens, and businesses through digital platforms.²⁵ Different approaches define e-government, including administrative, technological, and instrumental perspectives,

highlighting its role in modernising public administration and fostering the development of an information society.²⁶ E-government is seen as a tool for offering services, information, and democratic procedures, ultimately transforming the traditional hierarchical public administration system into a more network-based structure.²⁷

As highlighted in the provided contexts, e-government stands out from traditional government services due to several key characteristics. Firstly, e-government leverages information and communication technologies to enhance service accessibility, efficiency, transparency, and accountability.^{28,29} It enables the rapid delivery of services, promotes citizen participation, and fosters trust between governments and societies.³⁰ Additionally, e-government emphasises using electronic-based systems to provide integrated and user-centric services, catering to the community's needs while improving service quality.³¹ This digital transformation not only streamlines processes but also aims to increase the effectiveness of public services by utilising technology.^{24,26} Adopting e-government signifies a shift towards modern, efficient, citizen-focused governance practices.

One of the most notable features of e-government is its reliance on digital delivery channels, which revolutionise how citizens access government services.³² Unlike traditional government services, which often necessitate physical visits to government offices or reliance on paper-based documentation, e-government services are accessible through digital platforms such as websites, mobile applications, and online portals.³³ This 24/7 availability ensures that citizens can access information and conduct transactions conveniently, transcending the constraints of office hours and geographic location.¹⁷ Furthermore, e-government streamlines administrative processes through digitisation and automation, reducing bureaucracy and enhancing efficiency.¹⁵ Governments can deliver services more swiftly and cost-effectively

by digitising paperwork, automating workflows, and minimising manual interventions.¹² This streamlined approach improves service delivery and enhances transparency and accountability,¹³ as citizens can track the status of their applications and monitor government expenditures through online platforms.

Personalisation and customisation are also hallmarks of e-government, allowing governments to tailor services to individual citizens' needs and preferences.³⁴ Governments can provide targeted information, recommendations, and notifications through user profiles and data analytics, enhancing the overall user experience.³⁵ This level of personalisation fosters greater citizen engagement and satisfaction, driving positive outcomes for both governments and citizens.³⁶ Moreover, e-government enhances accessibility for citizens with disabilities or those residing in remote areas by offering alternative formats, assistive technologies, and multilingual support.³⁷ This commitment to inclusivity ensures that all citizens have equal access to government services, regardless of their geographic location or physical abilities.³⁸ In addition to these key characteristics, e-government initiatives often result in government cost savings by reducing the need for physical infrastructure, paper-based documentation, and manual labour.³⁹ Automated processes and digital transactions minimise administrative overheads and operational expenses, allowing governments to allocate resources more effectively and efficiently.

Therefore, the evolution of e-government represents a paradigm shift in governance, leveraging digital technologies to enhance efficiency, accessibility, and transparency in public administration. By embracing the key characteristics of e-government, governments can deliver services more effectively, empower citizens, and foster trust and accountability in government institutions. As the digital revolution unfolds, e-government will play an increasingly pivotal role in shaping the future of governance worldwide.

2.3. Public Administration Performance Index (PAPI)

The Viet Nam PAPI is a collaboration between the Centre for Community Support Development Studies (CECODES) under the Viet Nam Union of Science and Technology Associations (VUSTA) and the United Nations Development Programme (UNDP) in Viet Nam since 2009, with a close partnership and support of the Centre for Theory Work of the Viet Nam Fatherland Front from 2009-2010, the Front Review from 2010-2012, the Commission for People's Petitions under the National Assembly Steering Committee in 2012, and the Centre for Research and Training of the Viet Nam Fatherland Front—VFF-CRT from 2013.⁴⁰ Real-Time Analytics joined the implementation consortium in 2015 to provide technical platforms for real-time PAPI data collection and fieldwork monitoring. Since 2012, the Ho Chi Minh National Political Academy (HCMA) has partnered with UNDP Viet Nam to conduct action-based research using PAPI data and provide PAPI findings to political leaders and executives through high-level training programmes.

The Viet Nam PAPI is the country's most extensive annual time series; PAPI assesses three mutually reinforcing processes: policy making, policy implementation and the monitoring of public service delivery. The dimensions are tailored to Viet Nam's national and local contexts.⁴¹ The philosophy behind PAPI's innovative policy monitoring approach is that citizens are seen as "end-users of public administrative services" capable of assessing governance and public administration in their localities. From 2009 to 2020, PAPI captured and reflected the experiences of 146,233 citizens with diversified demographic features. The result is that Vietnam's first publicly available dataset objectively evaluates governance from the citizens' perspective.⁴² Based on this citizen input, PAPI provides a set of objective indicators that help assess the performance in governance and public administration while at the same time

providing an incentive for provinces to improve their performance over the long term.⁴⁰

PAPI is supported substantively and technically by a national advisory board and a group of international governance measurement experts. PAPI has sponsors through periods, such as the Government of Spain for their funding for PAPI in its initial stage between 2009 and 2010; the Swiss Agency for Development and Cooperation (SDC) for its generous funding from 2011 to November 2017; the Department of Foreign Affairs and Trade (DFAT) of Australia for stepping in to fund PAPI from December 2017 to June 2021; the Embassy of Ireland for their additional funding for the 2018-2021 period; as well as to UNDP in Viet Nam for their funding support since 2009.

The overall picture from the PAPI Index results shows that governance and public administration efficiency at the national level has gradually improved over ten years from 2011 to 2020. The term of government at all levels 2016 - 2021 has more positive changes than 2011 - 2016. As many as 60 provinces and cities recorded positive changes, reflected in the annual PAPI Index growth rate, ranging from 0.1% to 3.1%. Since 2011, the PAPI study has monitored the governance and public administration performance of all 63 provinces and cities.

The PAPI Index serves as a sophisticated evaluative framework for assessing the efficacy of provincial governance in Vietnam. It meticulously examines various critical dimensions of public administration, including the rule of law and security, encompassing elements such as corruption, law enforcement, and citizen security; economic management, evaluating economic policies, investment, and employment generation; public services, scrutinising the quality of educational, healthcare, and infrastructural services; along with participation and inclusion, which assesses the extent of citizen engagement in governance processes and the inclusivity of public policies.

The PAPI Index combines quantitative and qualitative methods, using surveys, interviews, public records, focus groups, and observational studies to evaluate governance. It rates governance on a scale from 0 to 10 based on the weighted average of scores in four main areas: rule of law and security, economic management, public services, and participation and inclusion. Higher scores indicate better governance, with significant emphasis on the rule of law and security due to their essential role in establishing effective governance. The Index is articulated through a multi-criteria analysis (MCA) framework, facilitating the simultaneous appraisal of multiple evaluative criteria - a crucial aspect when delineating the complexities inherent in governance performance assessment. The MCA methodology encompasses the definition of criteria (the four main components), the assignment of weights reflective of their relative importance, data collection and normalisation to a uniform 0-1 scale, culminating in the calculation of a weighted average of these normalised scores to determine the overarching PAPI Index score. The PAPI Index is invaluable for analysing governance performance at the provincial echelon in Vietnam. Its comprehensive and impartial evaluation yields pivotal insights, potentially guiding policy formulation and fostering enhancement in governance practices nationwide.

According to Resolution No. 26-NQ/TW dated November 03, 2022, of the Politburo on socio-economic development and ensuring national defence and security in the North Central and Central coastal regions until 2030, with a vision to 2045, in particular, based on the reality of the province to implement the Prime Minister's Decision No. 1619/QĐ-TTg dated December 14, 2023, approving the planning of Binh Dinh province from 2021 to 2030, with a vision to 2050, Binh Dinh province determines the development of the province as a key economic centre of the region and the whole country.⁴³ Through green transformation

and digital transformation, creating a strong transformation in restructuring the economy and improving the investment and business environment, improving local competitiveness, and developing effective green and circular economy models, comprehensively achieve digital transformation goals across all three pillars: digital government, digital economy, and digital society. Special attention is paid to improving the Provincial Competitiveness Index (PCI) and the Provincial Governance & PAPI.

3. METHODOLOGY

This study adopts a qualitative approach to explore the complexities of the research topic, leveraging the strengths of qualitative methods to gain in-depth, contextual insights. The qualitative methodology is particularly suited for this research as it allows for a comprehensive understanding of multifaceted phenomena through detailed analysis of textual data.⁴⁴ The primary method employed is secondary research, which entails a systematic review and analysis of pre-existing documents and reports to gather relevant data.⁴⁵

The data collection process involved a thorough review of nearly 70 documents, selected for their relevance and potential to provide a comprehensive overview of the subject matter. These documents were categorised into three main groups. First, 11 legal documents were analysed to understand the legal framework and context pertinent to the study. These included legislation, regulatory policies, and other documents that provided critical insights into the legal dimensions of the research topic. Second, the study reviewed four reports of PAPI results. These reports offer both quantitative and qualitative data on public administration's performance. The PAPI reports were crucial in evaluating the effectiveness and impact of various public administration policies and practices, contributing significantly to the overall analysis. Finally, a diverse array of other related documents was examined. This category included academic articles, policy papers, government reports,

newspapers and other relevant publications. Including these documents, they have ensured a holistic understanding of the research topic by incorporating various perspectives and insights from various sources.

This study's qualitative approach and secondary research methodology enabled an in-depth exploration of the research topic. By analysing a substantial number of documents, including legal texts, performance reports, and other relevant literature, the study was able to draw well-supported conclusions and provide valuable insights. This comprehensive approach ensured that the research findings were robust, reliable, and reflective of the complexities of the subject matter.

4. ANALYSIS PAPI INDEX IN BINH DINH PROVINCE IN THE 2020-2023 PERIOD

4.1. PAPI index results in Binh Dinh province from 2020 to 2023

4.1.1. PAPI index 2020

In April 2021, the UNDP in Vietnam led the launch of the PAPI 2020. According to the report, Binh Dinh belongs to the group of 4 localities with the highest increase in the score of the component "Public service provision".

To obtain the PAPI index, the survey was conducted on a 550-question questionnaire in the form of face-to-face interviews, filling in information on tablets connected to servers to transfer data through the internet connection. In Binh Dinh, survey activities were conducted in Quarters 1 and 5 of Le Loi Ward, Quarters 5 and 7 of Nhon Phu Ward (Quy Nhon City); Thanh The Quarter, Trung Tin 1 of Tuy Phuoc Town, Lac Dien Village, Tu Cung of Phuoc Thang Commune (Tuy Phuoc District); Dinh To Quarter, Dinh Binh of Vinh Thanh Town, An Noi Village, Vinh Dinh of Vinh Thinh Commune (Vinh Thanh District) with a total of 240 votes. According to the summary of PAPI 2020 results, Binh Dinh reached 43.25/80 points in the "medium-high" group, ranked 22/63 provinces

and cities, up 41 places compared to 2019. Previously, Binh Dinh's PAPI 2018 index only reached 41.04 points, belonging to the “lowest score” group.

Component-specific scores (10-point scale): citizen participation at grassroots level 4.70 points; openness and transparency in decision making 5.52 points; accountability to the people 4.93 points; control of corruption in the public sector 7.21 points; public administrative procedures 7.32 points; public service provision 7.59 points (7.71); environmental governance 3.57 points; e-governance 2.41 points. Of the 8 component scores of PAPI 2020, Binh Dinh has 7 points increase compared to 2019. In particular, the most significant is “Publicity and transparency in decision-making at the local level”, with 4 component contents: Access to information; Publicity and transparency of the list of poor households; Publicity and transparency of the commune-level budget; Publicity and transparency of land use planning/plans and land acquisition compensation price brackets. This component score of Binh Dinh increased by 0.64 points compared to 2019, and Thai Nguyen is the two localities with the highest improvement.

Previously, after the inspection and evaluation of the results of the PAPI Index 2019 conducted in mid-2020, the provincial Inspection Team proposed many solutions to enhance the implementation of openness and transparency. In particular, it is noteworthy to publicise on radio stations regularly and post on information boards contents: Socio-economic development plan; commune-level budget revenues and expenditures; projects, investment works, implementation progress, compensation plans, site clearance and resettlement support; detailed land use plannings and plans and plans for adjustment and planning of residential areas that directly affect people in the area; information of officials directly solving work for the people, mobilising people's contributions...

PAPI Index in 2020 results, particularly the component scores pertaining to openness

and transparency, have exhibited significant improvement, reflecting numerous positive developments in various localities within the province. The principles of openness and transparency in administrative processes are anticipated to become critical prerequisites for local governing bodies, especially those operating at the grassroots level, which is in closest proximity to the citizenry.

In addition to openness and transparency, Binh Dinh is also in the group of 4 localities with the highest increase in the score of the component “Public service provision” (including Public Health, Public Primary Education, Basic Infrastructure, ANTT in residential areas). However, in the “Public administrative procedures” score, Binh Dinh belongs to the group of localities with the lowest score regarding the capacity to carry out administrative procedures for people at the commune level. This is a matter of great concern in the process of administrative reform in commune-level localities in the province. Thus, in order to maintain the growth momentum in the following years, leaders of People's Committees of Districts, Towns and Cities need to pay attention to directing relevant departments, units and communes, wards and townships to seriously develop specific plans to implement content on improving and enhancing the provincial PAPI Index associated with the responsibility of the head of each level, considering this as a regular focus task. At the same time, coordinate with relevant agencies and branches to organise propaganda and dialogue with people, promptly resolving people's petitions and grievances in each field.

4.1.2. PAPI Index 2021

In 2021, PAPI surveyed 15,833 participants from 63 provinces and cities nationwide. Building on a successful pilot study in 2020, PAPI continues to expand research on migrants' access to good governance and quality public services in the provinces and cities they move to. In 2021, PAPI interviewed 1,042 temporary residents

in 12 provinces and cities with favourable domestic immigration rates. The survey results show that the COVID-19 pandemic has exacerbated challenges in accessing effective public governance for temporary and permanent residents in provinces receiving large numbers of migrants. In May 2022, in Hanoi, the UNDP in Vietnam, the Australian Ambassador, and the United States Agency for International Development (USAID) jointly launched the PAPI Report in Vietnam 2021.

According to the summary of PAPI 2021 results, Binh Dinh reached 41,499/80 points and was ranked 37/63 provinces and cities, down 15 places compared to 2020. Component-specific scores (10-point scale): Grassroots citizen participation 4,621 points; openness and transparency in decision-making 4,913 points; accountability to the people 4,161 points; control of corruption in the public sector 6,795 points; public administration 6,964 points; provision of public services 7,914 points; environmental governance 3,626 points; e-governance 2,950 points. 5/8 of the content indicators decreased compared to 2020, including “People’s participation at grassroots”, “Transparency”, “Accountability to the people”, “Control corruption in the public sector”, and “Administrative procedures”.

4.1.3. PAPI index 2022

In April 2023, the Center for Development Studies and Community Support in Hanoi, the Viet Nam Fatherland Front Centre for Staff Training and Scientific Research and the United Nations Development Programme in Vietnam held a conference to launch the PAPI 2022.

Accordingly, Binh Dinh scored 41.67 points, in the low average group of the country, down 0.26 points, ranked 38/61 provinces and cities (in 2021, reached 41.93 points, ranked 37/60 provinces and cities). In the South Central coastal region, Binh Dinh is only 0.92 points ahead of Phu Yen and is in the low average group; Da Nang, Quang Nam, Quang Ngai are

in the high middle group; Khanh Hoa, Ninh Thuan, Binh Thuan belong to the highest group. The 2022 PAPI continues to measure eight content indicators: Citizen participation at the grassroots level, openness and transparency in decision-making, accountability to the people, control of corruption in the public sector, public administrative procedures and provision of public services, environmental governance, and e-administration. In 2022, 16,117 residents and voters participated in the PAPI survey. The 2022 PAPI report shows that the gap in provincial governance and public administration performance in 2022 between the highest and lowest score groups tends to narrow.

Three of the eight measured content indicators showed improvement, while five declined compared to 2021. Specifically, there were notable increases in publicity and transparency, which reached 5.04 points, marking a rise of 0.13 points. Control of corruption in the public sector improved to 7.07 points, rising by 0.28 points. Public administrative procedures also experienced a slight uptick, reaching 7.04 points, an increase of 0.08 points.

On the other hand, five indicators decreased in performance. Citizen participation at the grassroots level fell to 4.34 points, dropping by 0.28 points. Accountability to citizens showed a slight decline, reaching 4.14 points, down by 0.02 points. Public service delivery decreased to 7.81 points, falling by 0.1 points, while environmental management dropped significantly to 3.36 points, down by 0.27 points. Lastly, electronic governance also declined, reaching 2.87 points, with a decrease of 0.08 points compared to the previous year.

4.1.4. PAPI index 2023

With a total score of 43.5718 points, Binh Dinh ranked 19th on the PAPI in Vietnam in 2023, up 19 places compared to 2022. These are the results announced in the PAPI Report 2023, organised by the Center for Development Research and Community Support (CECODES)

under the Vietnam Union of Science and Technology Associations and the United Nations Development Programme (UNDP) in Viet Nam in April 2024 in Hanoi.

The surveyed PAPI ratings were assessed on eight content indicators: People's participation at the grassroots level, Openness and transparency in local decision-making, Accountability to the people, Control corruption in the public sector, Public administrative procedures, Provision of public services, environmental governance and e-governance. Accordingly, 7/8 of Binh Dinh's component indicators in 2023 will increase compared to 2022. Among these eight indicators, Binh Dinh has one index in the high group, Controlling corruption in the public sector, with 7,453 points, up 0.383 points. There are five indicators in the high average group: Openness and transparency in local decision-making (5.4563 points, up 0.4163 points); Public administrative procedures (7.2301 points, up 0.1901 points); Public service provision (7.7623 points, down 0.0477 points); Environmental Governance (3.5785 points, up 0.2185 points); E-governance (3.2881 points, up 0.4181). One index in the low average group, Accountability to the People, reached 4.2454 points, up 0.1054 points. One indicator in the lowest group is people's Participation at the grassroots level, with 4.5581 points, an increase of 0.2181 points.

Table 1 illustrates the PAPI Index for Binh Dinh Province across eight dimensions from 2020 to 2023, highlighting a mix of advancements and areas requiring further attention. Regarding Participation at Local Levels, the score experienced a decrease from 4.7 in 2020 to 4.34 in 2022, followed by a slight recovery to 4.56 in 2023. This suggests that although citizen participation encountered challenges in previous years, recent efforts have been made to enhance grassroots involvement. Similarly, Transparency has shown consistent improvement, with the score climbing from 4.91 in 2021 to 5.46 in 2023, indicating ongoing progress in promoting open and accessible governance for the public.

The score for Vertical Accountability has fluctuated recently, dropping from 4.93 in 2020 to 4.14 in 2022 before slightly recovering to 4.25 in 2023. This suggests that despite setbacks, recent improvements indicate efforts to rebuild trust. On the other hand, Control of Corruption has demonstrated a consistently positive trend, with the score increasing from 6.79 in 2021 to 7.45 in 2023, highlighting significant progress in curbing corruption in the public sector. Public Administrative Procedures have also seen a slight but steady increase, rising from 7.04 in 2022 to 7.23 in 2023, showcasing ongoing efforts to streamline processes and enhance administrative efficiency.

Table 1. Binh Dinh Province’s PAPI index.

Dimensions	2020	2021	2022	2023
Participation at Local Levels	4.7	4.62	4.34	4.56
Transparency	5.52	4.91	5.04	5.46
Vertical Accountability	4.93	4.16	4.14	4.25
Control of Corruption	7.21	6.79	7.07	7.45
Public Administrative Procedures	7.32	6.96	7.04	7.23
Public Service Delivery	7.59	7.91	7.81	7.76
Environmental Governance	3.57	3.63	3.36	3.58
E-Governance	2.41	2.95	2.87	3.29

Source: <https://papi.org.vn/>

The Public Service Delivery experienced a slight decrease from 7.91 in 2021 to 7.81 in 2022 but showed improvement to 7.76 in 2023, indicating a consistent and relatively high level of service provision. Environmental Governance remains a concern, declining from 3.63 in 2021 to 3.36 in 2022, followed by a modest recovery to 3.58 in 2023. This suggests that although some progress has been made, more attention is required to enhance environmental management. Lastly, E-Governance exhibited a downward trend, dropping to 2.87 in 2022 but rebounded to 3.29 in 2023, reflecting increased efforts to bolster digital governance and electronic services.

The PAPI index for Binh Dinh Province reflects a combination of advancements and obstacles. The province has shown significant progress in enhancing transparency, controlling corruption, streamlining administrative procedures, and implementing e-governance. However, persistent challenges exist in citizen participation, environmental governance, and accountability, indicating the need for continued focus and sustained efforts to achieve comprehensive improvements in governance and public administration performance.

4.2. Highlighted implementations of digital transformation to improve the PAPI index in Binh Dinh province (2020-2024)

4.2.1. In 2020

This is the year of the ongoing COVID-19 pandemic, and many activities of state agencies only focus on epidemic prevention. Therefore, Binh Dinh province continues to implement the unfinished content of 2019 to improve the PAPI index. Plan No. 53/KH-UBND defines specific objectives, tasks and solutions to improve the efficiency of governance and public administration of the province, contributing to building an open, transparent, and effective administrative apparatus, especially grassroots authorities, contributing to improving the province's PAPI Index in the coming time. Improving and enhancing the provincial PAPI

Index in 2019 and the following years, the province's PAPI ranks in the high average group or higher. Enhance the responsibilities of heads of state agencies and each cadre, civil servant and public employee in synchronous and drastic implementation of solutions to improve the provincial PAPI Index in the following years.

Plan No. 53/KH-UBND proposes 08 tasks and solutions: 1. Increase people's participation at the grassroots level; 2. To make good publicity and transparency regarding the contents specified in Ordinance No. 34/2007/PL-UBTVQH11 in communes, wards, and townships; 3. Improve accountability to the people; 4. Strengthen the control of corruption in the public sector; 5. Focus on reforming administrative procedures; 6. Improve the quality of public service provision; 7. Improve the efficiency of environmental governance; 8. Promote e-governance.

Provincial People's Committee requires that the Plan to improve the PAPI Index be implemented in sync with the State Administrative Reform Program from 2011 to 2020 and associated with the Action Plan of the Provincial Committee on State Administrative Reform Program from 2016 to 2020. The provincial People's Committee assigns specialised agencies under the province; People's Committees of Districts, Towns and Cities; People's Committees of Wards, Communes, and Towns, based on assigned functions and tasks and based on tasks and solutions of the Plan, formulate implementation programs and plans in their units and localities.

The Department of Home Affairs monitors, urges and summarises the implementation of this Plan; coordinates with relevant agencies to promote propaganda to raise awareness of cadres, civil servants and public employees about the PAPI Index; organises preliminary and summary to analyse and evaluate the aspects, the limitations to having timely solutions, help improve the provincial PAPI Index in the coming time, report to the Provincial People's Committee for timely direction. The Department of

Information and Communications shall assume the prime responsibility for, urge and orient the provincial Radio and Television Station, Binh Dinh Newspaper and relevant agencies and units to step up the work of information, propaganda and dissemination of this Plan; report news and articles reflecting on the implementation results for the people to know and supervise.

Request the provincial Vietnam Fatherland Front Committee to assume the prime responsibility for and coordinate with concerned agencies in participating in building and strengthening the people's administration, supervising and criticising the society for the operation of local governments at all levels in the province; organise the implementation of solutions to improve the operation quality of the People's Inspection Board, the Community Investment Supervision Board, the organisation of dialogues between Party committees, authorities and the people, contributing to improving the accountability of grassroots authorities to the people.

4.2.2. In 2021

The chairman of the Provincial People's Committee signed Official Letter No. 2092/UBND-KSTT assigning the Director of the Department of Home Affairs to carry out the task for the PAPI Inspection Team in Vietnam in 2019 (established in Decision No. 1934/QĐ-UBND dated 20.5.2020 of the Chairman of the Provincial People's Committee) to continue to carry out the inspection, evaluate the contents of the 2020 PAPI Index in relevant localities. On that basis, propose tasks and solutions to continue improving the results of the PAPI Index in the coming years, successfully implementing the objectives of the Action Program of the Provincial Committee on administrative reform, focusing on administrative procedure reform from 2020 to 2025.

According to the 2020 PAPI results published in April 2021, Binh Dinh province reached 43,249 points, ranking 22/63 provinces and centrally-run cities. Regarding this result, the

Chairman of the Provincial People's Committee praised the efforts and efforts of leaders, cadres, civil servants, officials of agencies, units and localities in the province in organising the implementation of assigned tasks, creating positive changes and improving PAPI in 2020 (higher than in 2018, 2019).

In October 2021, the Provincial People's Committee issued a letter requesting the Chairman of the People's Committee of An Lao District, An Nhon Town and Quy Nhon City to urgently direct the review and overcome the shortcomings and limitations in the implementation of contents related to the PAPI in Vietnam. "Heads of relevant local governments shall be responsible before competent authorities and before provincial People's Committees if they allow the loss of PAPI Index points in the coming time for problems recommended by the provincial PAPI Index Survey and Assessment Team for overcome", the dispatch stated.

Previously, in September 2021, the PAPI Index Survey and Evaluation Team had Report No. 116/BC-DKS on the results of the survey and assessment of the implementation of PAPI Index contents in An Hoa Commune, An Lao Town (An Lao District), Tran Hung Dao Ward, Tran Quang Dieu Ward (Quy Nhon City), Binh Dinh Ward, Nhon Phuc Commune (An Nhon Town). The report has specifically assessed the results of the implementation of tasks related to the implementation of PAPI Index contents, including People's participation at the grassroots level; openness and transparency, accountability to the people; control of corruption in the public sector, public administrative procedures; provision of public services; environmental governance; e-governance...

Promulgate Regulations on Management and Use of Digital Signatures

On 11/8/2021, the People's Committee of Binh Dinh Province issued Decision No. 48/2021/QĐ-UBND on the promulgation of regulations on the management and use of digital signatures and digital certificates in state

agencies of Binh Dinh Province. Accordingly, this Regulation provides for the management and use of digital signatures and specialised digital certificates by the government in state agencies of Binh Dinh province. In addition, the Regulation does not provide for the use of digital signatures and digital certificates for electronic documents containing information on the list of state secrets.

Precisely, the Regulation consists of 4 Chapters with 15 Articles; this new regulation replaces the documents guiding the management and use of digital signatures, digital certificates and digital signature certification services at state agencies of Binh Dinh province that have been applied since March 29, 2017, by the provincial People's Committee. According to the Regulation, the Director of the Department of Information and Communications acknowledges the authorisation of the Chairman of the provincial People's Committee in Decision No. 5114/QĐ-UBND dated December 15, 2020, to perform the responsibilities of subscriber managers of digital signatures and digital certificates issued by the Government Cipher Committee to individuals, state agencies and organisations in Binh Dinh province. The regulation stipulates management principles and the government's use of digital signatures and specialised digital certificates in Binh Dinh province. Direct management agencies are agencies and organisations with legal status and their seals belonging to state agencies and organisations that directly manage subscribers using specialised digital signature certification services for the Government.

Specifically, the management and use must comply with the provisions of Articles 5, 6, 7, 8 and 9 of the Government's Decree No. 130/2018/ND-CP dated September 27, 2018, detailing the implementation of the Law on Electronic Transactions on digital signatures and digital signature certification services.

In addition, the management and use of digital signatures and certificates must ensure information safety and security: Using digital signatures and specialised digital certificates

provided by the Government in various types of electronic transactions of state agencies as prescribed in Article 57 of Decree No. 130/2018/ND-CP; Using digital signatures and specialised digital certificates provided by the Government in electronic transactions at information systems of tax agencies, social insurance, treasury, and other electronic transactions must comply with the Law on Electronic Transactions and guidelines, stipulate the use of digital signatures and digital certificates in electronic transactions of such information systems. Digital signatures must be consistent with reality and timely archival and administrative clerical work when applying digital signatures in the province.

According to the Regulation, seven groups of prohibited acts include Obstructing individuals, agencies and organisations from using digital signatures: Do not use tools, programs or any other means to alter data or damage the device that stores the secret key; Obstructing, changing, falsifying or illegally preventing transmitting, sending and receiving digitally signed electronic documents; Creating or distributing software programs that disrupt, change, sabotage the operating system or commit other acts aimed at sabotaging the technological infrastructure of e-transactions; Directly or indirectly sabotage the digital signature certification service-providing system of the digital signature certification service-providing organisation; obstructing the provision and use of digital signature certification services; forging or instructing others to forge digital certificates; Theft, fraud, counterfeiting, impersonation, misappropriation or unauthorised use of digital signatures and devices storing secret keys of organisations and individuals; Using digital signatures to oppose the State of the Socialist Republic of Vietnam, causing insecurity, social order and safety or conducting other activities contrary to law and social morals.

In addition, the new Regulation also provides specific guidance on procedures for registration of new issuance, renewal and change of information contents, revocation

of digital certificates, revocation of secret essential storage devices, restoration of secret essential storage devices, Using digital signatures and specialised digital certificates for the Government in document management and administration software at state agencies in Binh Dinh province. The Department of Information and Communications shall assume the prime responsibility for and coordinate with relevant agencies and organisations to guide, implement, and inspect the implementation of this Regulation.

4.2.3. In 2022

In May 2022, the Chairman of the Provincial People's Committee issued Official Letter No. 2497/UBND-KSTT, directing the results of the PAPI index in 2021. Accordingly, based on studying the contents of the PAPI Index report in 2021, the Chairman of the Provincial People's Committee assigned the Department of Home Affairs to assume the prime responsibility for and coordinate with the provincial Vietnam Fatherland Front Committee and relevant agencies and units in, surveying, approving, analysing and evaluating the implementation of the contents, criteria of the PAPI index in 2021 are associated with the assessment of the leadership, direction and administration of heads of agencies, units and localities related to the implementation of the "Plan of the Provincial People's Committee on improving and enhancing the provincial PAPI Index" and the directive documents of the Chairman of the Provincial People's Committee on the PAPI Index. From there, synthesise, report, advise and propose specific solutions to substantially improve the results of the PAPI index in the coming time to meet the objectives and requirements according to the Action Program No. 09 of the Provincial Committee on Administrative Reform, focusing on administrative procedure reform from 2020 to 2025.

Following that, in July 2022, the Chairman of Binh Dinh Provincial People's Committee signed Official Letter No. 3683/UBND-KSTT directing the thorough overcoming of shortcomings and

limitations in the implementation of tasks related to the results of the PAPI. Specifically, the Chairman of the Provincial People's Committee requested the Chairman of the People's Committee of Quy Nhon City, An Nhon Town and An Lao District (localities covered by the PAPI Index survey in 2021) to seriously draw experience in leading directing, inspecting and urging the organisation and implementation of the Chairman's directions for the task of improving the Index Provincial PAPI.

At the same time, carefully study the contents of reports related to the PAPI Index, based on closely reviewing and assessing the actual situation in the locality, urgently take measures and solutions and drastically direct the work of thoroughly overcoming the limitations and existences related to the provincial PAPI Index. The Chairman of the Provincial People's Committee assigned the Directors of the departments: Justice, Health, Information Communication, Natural Resources Environment, Education & Training, the Chief Inspector of the province and the Chief of Office of the Provincial People's Committee to coordinate, guide and regularly inspect and urge the 3rd local People's Committee to overcome the shortcomings and limitations in the areas of state management within the scope of functions, assigned tasks. For People's Committees of Districts and Towns that have not been surveyed for the PAPI Index, the Chairman of the Provincial People's Committee requests to conduct a self-review and assessment of the implementation of contents related to the PAPI Index in their localities and proactively overcome shortcomings and limitations (if any). The Provincial People's Committee also requests the Provincial People's Committee to coordinate in directing, guiding, examining and urging district-level and commune-level local committees to perform tasks and solutions to improve the efficiency of civil advocacy work of the government, implement democratic regulations at grassroots level and mobilise people to participate in meetings actively, provide

comments to local authorities to contribute to improving the effectiveness of the implementation of contents related to the PAPI Index.

According to the provincial People's Committee, besides some remarkable efforts, overcoming shortcomings and limitations related to the PAPI Index in 2021 has yet to meet the set requirements. Notably, several issues that existed at the commune level in the past (such as information work, propaganda for officials and civil servants on the PAPI Index, Publicising Administrative Procedures (PAP), handling late PAP dossiers and the quality of activities of the people's inspection board) were surveyed by the delegation, assessment of the province's PAPI Index in 2020 identifies and recommends remediation, but relevant localities have not strictly implemented it. Since then, it has continued to lose points, affecting the results of the province's PAPI Index in 2021 and not meeting the goals and requirements of the Provincial Committee in the Action Program on Administrative Reform, focusing on PAP reform in the period 2020 - 2025.

Publishing the Zalo Official Account Binh Dinh E-Government

A prominent activity in 2022, Binh Dinh province has launched an information page on the Zalo application platform. During 2021, Vietnam was heavily affected by the Covid-19 epidemic. This is again a time that many localities take advantage of to promote propaganda and encourage people and businesses to use online public services. At the same time, Zalo is an information channel associated with people's social life activities, from security and order and crime prevention to daily utilities. In particular, "Binh Dinh e-government" (*Chính quyền điện tử Bình Định*) is considered one of the first units to launch a series of utilities to meet the needs of people in the province, such as looking up high school test scores, looking up traffic violations, viewing traffic cameras, etc. As a result, the National High School Exam 2021 had tens of thousands of candidates, and students' parents looked up favourable test scores. "This Zalo

Official Account (OA) has helped the Department bring news to people and businesses quickly, accurately and promptly. At the same time, statistics on the effectiveness of propaganda work. Zalo OA *Binh Dinh e-government* has become an information channel highly appreciated by people", said Mr Tran Kim Kha, Director of Binh Dinh Department of Information and Communications. The goal is to make people and businesses the centre, subject, and driving force of digital transformation. Technology platforms such as Zalo have been practical tools provinces and cities use in this process.

4.2.4. In 2023

On May 30, 2023, the Chairman of the provincial People's Committee approved Decision No. 1901/QĐ-UBND promulgating the Digital Transformation Assessment Index of departments, departments, branches, districts, towns and cities of Binh Dinh province. The Digital Transformation Assessment Index of departments, departments, branches, districts, towns, and cities of Binh Dinh province (referred to as the DTI Index) serves as the annual measurement, evaluation, and ranking of the implementation of digital transformation work by agencies, units, and localities in the province.

The DTI assessment index consists of 7 key indicators with 40 component indicators calculated on a 500-point scale. Meanwhile, the district-level DTI assessment index includes eight main indicators with 60 component indicators calculated on a 700-point scale. The promulgation of the above DTI is one of the tasks to implement Resolution No. 05-NQ/TU dated September 20, 2021, of the 20th Standing Committee of Binh Dinh Provincial Committee on the digital transformation of Binh Dinh Province to 2025, orientation to 2030 and programs, next year of the province related to digital transformation.

The results of the DTI assessment indicators shall be announced and publicised immediately after the appraisal and assessment, and the provincial People's Committee shall

decide to approve them. Agencies, units, and localities shall self-assess and compare with assessment results by publicising assessment methods and scoring methods for assessment contents and criteria.

4.2.5. In 2024

In January 2024, the Chairman of the Provincial People's Committee, Pham Anh Tuan, Head of the Provincial Digital Transformation Steering Committee, chaired a meeting of the Provincial Digital Transformation Steering Committee to evaluate the management of digital transformation in 2023 and propose solutions to improve the efficiency of implementing the digital transformation plan in 2024.

In the report at the meeting, in 2023, digital transformation in Binh Dinh province will achieve outstanding results, with the active participation of all levels, sectors, localities, businesses and people. This is reflected in 9 groups: Communication, promoting digital transformation, reviewing and completing mechanisms and policies on digital transformation, digital infrastructure, building and upgrading digital platforms, developing digital data, digital transformation human resources,

cyberinformation security, digital government, digital economy, and digital society. Notably, the provincial Public Service Portal has provided 846 partially online public services and 941 full-process online public services (fulfilling the goal of 100% of eligible administrative procedures as prescribed by law provided in the form of full-process online public services); 100% of online public services are integrated and provided on the National Public Service Portal, contributing to transparency, preventing corruption, promoting socio-economic development of the province. The basic Provincial Data Center infrastructure ensures information security for information systems: electronic office systems, emails, websites, connection axes, and smart city service systems.

In 2024, Binh Dinh province will focus on building platforms and developing modern information and communication technology infrastructure. It aims to improve information security, develop digital government, promote administrative reform, and enhance competitiveness. The province aims to develop the digital economy and society to contribute to rapid and sustainable socio-economic development and ensure national defence and security.

Table 2. Summarise highlighted implementations of digital transformation (2020-2024).

Years	Highlighted Implementations
2020	Defining specific objectives, tasks and solutions to improve the efficiency of governance and public administration of the province, contributing to building an open, transparent, and effective administrative apparatus, especially grassroots authorities, contributing to improving the province's PAPI Index in 2020
	Planning to improve the PAPI Index be implemented in sync with the State Administrative Reform Program from 2011 to 2020 and associated with the Action Plan of the Provincial Committee on State Administrative Reform Program from 2016 to 2020.
2021	Requesting the Chairman of the People's Committee of An Lao District, An Nhon Town and Quy Nhon City to urgently direct the review and overcome the shortcomings and limitations in the implementation of contents related to the PAPI in Vietnam
	Promulgating Regulations on Management and Use of Digital Signatures
2022	Requesting to implement Action Program No. 09 of the Provincial Committee on Administrative Reform, focusing on administrative procedure reform from 2020 to 2025
	Publishing the Zalo Official Account Binh Dinh E-Government

2023	Promulgating the Digital Transformation Assessment Index of departments, departments, branches, districts, towns and cities of Binh Dinh province
2024	Focusing on building platforms and developing modern information and communication technology infrastructure.
	Setting specific goals for digital government, digital economy and digital society, accompanied by 12 groups of tasks.

Source: Author.

The Provincial Digital Transformation Steering Committee also set specific goals for digital government, digital economy and digital society, accompanied by 12 groups of tasks, including Reviewing and completing digital institutions, digital infrastructure, digital human resources, digital awareness, basic digital platforms, digital data, etc. Cyberinformation security, digital technology enterprises, digital government, digital economy, digital society and building a space to experience digital products and services. In particular, striving for 100% of eligible administrative procedures prescribed by law to be provided in comprehensive online public services is essential. The proportion of work dossiers processed in the network environment reaches 90% at the provincial level, 80% at the district level and 60% at the commune level. At least 80% of administrative procedure dossiers are processed entirely online; People only enter data once; At least 90% of people and businesses are satisfied with handling administrative procedures. In terms of the digital economy, striving for a digital economy accounts for 10% of the GRDP of the province... The province's Digital Transformation Steering Committee requests all levels and sectors to continue promoting communication activities on the position, role and importance of building and developing digital government, digital economy and digital society in the socio-economic development of the province; Develop models of cooperation between state agencies and enterprises; Strengthen research and proposal to deploy integrated solutions, applications and information technology products for

building digital government, digital economy development, digital society, gradually building smart cities based on open data, applying new technologies, etc.

After the meeting, Pham Anh Tuan, Chairman of the Provincial People's Committee, noted the positive impact of digital transformation in the province. However, he also mentioned shortcomings such as the prevalent use of paper documents, instability in the information technology network infrastructure, and limited information and data sharing between agencies and units. The Chairman of the Provincial People's Committee emphasised the need for agencies, units, and localities to focus on implementing digital transformation work in 2024 to promote the digital economy and create a driving force for economic growth and labour productivity. This includes completing digital data, universalising digital infrastructure, and advising on digital transformation projects.

By early 2024, each department, branch, and locality must create a detailed plan with specific goals for implementation. The provincial government is investing in smart radio systems and smart cities, and efforts will continue to develop various smart systems such as agriculture, tourism, e-commerce, customs, ports, and healthcare. The Department of Information and Communications will deploy a virtual assistant and finalise central data within the Operation Center for analysing socio-economic development. In the digital society, there will be a focus on increasing the use of digital technology and infrastructure while limiting investment procurement.

5. CONCLUSION

In conclusion, Binh Dinh Province's case study is a compelling testament to the transformative power of digital governance in enhancing administrative efficiency, transparency, and citizen satisfaction. A comprehensive analysis of the province's digital transformation initiatives and their impact on the PAPI from 2020 to the present reveals several key insights and implications.

The results and analysis demonstrate significant improvements in crucial PAPI indicators, including access to public services, responsiveness, and transparency. These improvements can be directly attributed to the successful implementation of digital initiatives such as e-governance platforms, data analytics for decision-making, and enhanced citizen engagement through digital channels.

The implications for governance and policy extend beyond Binh Dinh Province, offering insights for other regions considering digital transformation initiatives. The significance of evidence-based policymaking and the adoption of innovative digital solutions cannot be overstated in driving improvements in public administration performance and citizen well-being. Therefore, Binh Dinh Province's experience is a beacon of inspiration for worldwide digital governance initiatives. By embracing digital transformation and prioritising citizen-centric approaches, governments can unlock new opportunities for efficiency, transparency, and inclusive governance. As Binh Dinh Province continues its digital journey, the lessons learned and the recommendations provided pave the way for future directions in digital governance, both within and beyond.

The study's findings may be limited in their generalisability as they are specifically focused on Binh Dinh Province and may only partially apply to other regions in Vietnam due to variations in governance structures, digital infrastructure, and socio-political contexts. The study's timeframe from 2020 to 2023

may not fully capture the long-term impact of digital transformation on public administration outcomes, suggesting that future research beyond this period may be necessary.

However, the aforementioned limitations may pave the way for new research avenues in the future. Subsequent research could surpass the year 2020 to encompass the long-term effects of digital transformation on public administration, as changes often require years to manifest fully. Comparative studies spanning different provinces or regions facilitate the identification of key drivers behind successful digital governance reforms, providing valuable insights into diverse local contexts. A mixed-methods approach, integrating PAPI index data with qualitative interviews, could help address causality issues and offer a more profound understanding of stakeholder perspectives. Furthermore, concentrating on specific digital tools and technologies utilised in public administration would aid in evaluating their efficacy in enhancing governance outcomes.

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