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"Run at Most Once": The Impact of e-Government on the Delivery of Government Services in Zhejiang Province, Peoples Republic of China

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Abstract

Information Technology substantially changed our daily lives. It includes the way citizens engage with the government. After 20 years of development, China's e-government service innovation platform ecosystem has taken a new shape. This study has the principal objective of investigating the impact of e-government on the delivery of government services in Zhejiang, China. It shows that E-government service in Zhejiang province provides conveniences and services to public life. That the use of government platforms for e -delivery services shows a high utilization rate for both ordinary citizens and Information Technology professionals showing a weighted mean score of 2.75 with an adjectival rating of "agree". It also shows that the use of e-government strengthens information dissemination and promotes citizens' satisfaction of government services. There are also challenges encountered in the use of electronic government such as lack of qualified technical staff, information security risks, and unequal level of development in the region. Therefore, the paper recommends that standardized training and close monitoring of government networks be done to ensure government data security address and intensify e- government efforts of using electronic means for service delivery. A study may also be done to investigate the use of electronic government at the grassroots level.

***Keywords**: e-Government; Government Service; Governance Effectiveness; Public Participation; Service-Oriented Government*

INTRODUCTION

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Looking Back--Governments can establish new lines of communication and ways for engagement through e-government by using the Internet revolution. Through the use of information, e-government helps citizens better exercise their rights and improves the interaction between the government and businesses and industries. It also helps governments manage their operations more efficiently. The practice of the use of internet technology provides greater accountability to the government while ensuring wider space for transparent operation (Gabriel, 2017; Gabriel & Castillo, 2019). E-government refers to a new mode of public management in which government departments/organizations fully apply modern information technology, network technology, and office automation technology to conduct office, manage and provide public services for the society in government affairs activities. E-government provides citizens with more effective government services, improves the

relationship between the government and enterprises and industries, better fulfill the rights of citizens through the use of information, and increases the effectiveness of government management. Electronic government increases citizens' participation in governance. It is both a responsibility and a privilege. To improve government management there is a need to improve citizens' willingness to participate in local governance via electronic means (Bawan, Marcos, and Gabriel, 2017).

E-government in China

The global digital revolution offers unparalleled opportunities for e-governments. Improvements that could be made to almost all public revolution programs enormous possibilities to enhance almost every aspect of public service delivery. Countries are approaching business with their population more creatively, from Europe to Asia to South America to Africa. Worldwide, the Internet industry to deliver government information and services is expanding. China, one of the most developed nations in the world, has actively promoted and invested in the development of the Internet to take advantage of the technology's enormous commercial potential. According to the 49th Statistical Report on Internet Development in China released by CNNIC, as of December 2021, the number of Internet users in China reached 1.032 billion, and the Internet penetration rate reached 73.0%. The proportion of Chinese netizens using mobile phones to surf the Internet is 99.7%. The utilization rates of instant messaging, online video, and short video users were 97.5%, 94.5%, and 90.5% respectively and the user scale reached 1.007 billion, 975 million, and 934 million respectively. The number of online offices and online medical users reached 469 million and 298 million respectively, up 35.7% and 38.7% year-on-year (China Internet Network Information Center, 2021).

After about 20 years of development, China's e-government service innovation platform ecosystem has taken shape. The e-government services in China had made significant advancements providing for efficient and effective government service delivery (Ullah et al., 2020). These platforms include government websites that flourished in 2003, government Weibo in 2001, government WeChat in 2013, government clients in 2014, government headlines in 2016, and government short videos in 2018 (Ma, 2019). With the rapid popularization of smartphones, mobile government service applications are becoming a new channel for government services in the mobile Internet era. With the rapid development of "micro- technology", mobile government service has been regarded as an important carrier to improve service level and efficiency in various regions, focusing

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on service items with large business volume, wide audience, and high utilization rate of the masses. It actively promotes the extension of government service items with wide coverage and high application frequency to the mobile terminal, promotes the realization of more government service items "handheld" and "fingertip", and enhances the people's sense of gain (China E-government Micro-Portal, 2021). With the solid advancement of China's e-government construction, the construction of the national integrated government service platform has been continuously improved, and the government service platforms of various regions and departments have been gradually interconnected. The online government service has changed from a one-way service stage focusing on information services to an overall service stage characterized by cross-regional, cross-departmental, and cross-level integrated government services. According to the Digital China Development Report (2020) released by the State Internet Information Office recently, at present, 82.13% of provincial administrative licensing items in China have been accepted online and "run at most once", and the average commitment time limit of more than half of administrative licensing items in China has been reduced by more than 40%. "Government affairs at fingertips" is smarter and more convenient, government services do not extend to the grassroots to the countryside, and government services are more refined (Xunwen, 2021).

The "Run at Most Once" government service reform in Zhejiang province is the driving force behind the development of digital governance. The overall plan for deepening the reform of "Run at Most Once" and promoting the digital transformation of the government in Zhejiang province was released by the People's Government of Zhejiang Province in December 2018. Liu (2019) explains the concept:

> The ‘run-at-most-once’ reform connotes that applicants in governmental organs and bodies should ‘run’ maximally once to these organizations as soon as their application documents are complete and the application corresponds to the requirements. Even a ‘zero- presence’ of applicants in the government apparatus (ling shangmen) is possible if the applicants choose to submit their application via the Internet (para. 2).

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THEORETICAL FRAMEWORK

The study has the principal objective of investigating the impact of e-government on the delivery of government services in Zheijang, China. It investigated the associated theories of social governance and e-government in terms of theoretical significance and offered research-based practical suggestions. The study aims to fully explore the significance and role of e-government, and provide theoretical references for making better use of e-government to deal with public affairs.

E-government as defined by Bernhard (2014) consists of three cores: a) e-democracy (relationships between the citizens and elected politicians); b) e-services (the relationship between the public administration and citizens); and c) e-administration for the internal usage of information technology tools within governmental organizations to provide reports and support for decision making. Meanwhile, social governance according to Bem (2010) is a theory, process, governance, and ethic highlighting the social dimensions of health, the ethic of community, and developed processes of collective responsibility towards a democratic, fair, healthy, and sustainable economy and society. Integrating social governance in e-government would ensure efficient and effective delivery of services particularly during health calamities such as the COVID-19 pandemic.

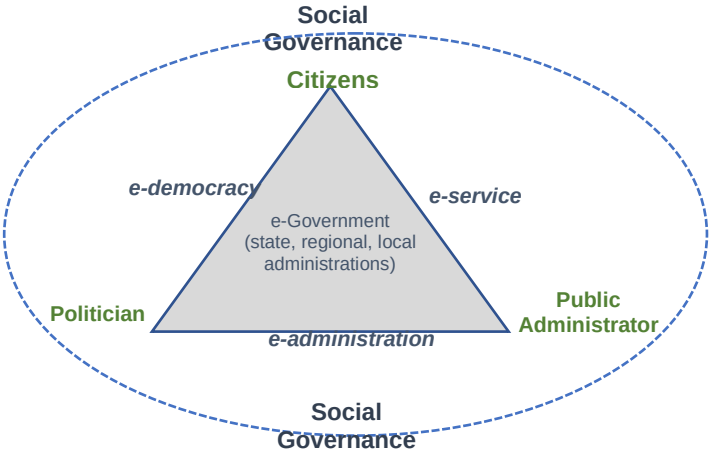

Figure 1: *The Framework of e-government and Social Governance*
Source: Modified from Bernhard (2014)

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The study aims to assess the impact of e-government on the delivery of government services in Zhejiang Province in the People's Republic of China, particularly: describe the use of e-government services; describe the impact of the use of e-government services; determine the significant relationship between the use of e-government services and the impact of the use of e-government services; describe the challenges encountered by Zhejiang Province in using e-government services; and offer recommendations to enhance the delivery of e-government services.

RESEARCH METHODOLOGY

Research Design

The study assessed the impact of e-government services in the province of Zhejiang using a concurrent mixed-method research technique. The descriptive statistics used in the study's quantitative component were averages, percentages, and frequency distributions used. Microsoft Excel and IBM SPSS 23.0 were used in this study to collect and analyze the data for the quantitative section. Content analysis was applied to the qualitative responses to understand the meanings and patterns as well as for the triangulation of quantitative data conclusions.

Surveys were spearheaded online to technical and non-technical participants, randomly selected from various regions of Zhejiang. The fundamentals of respondents' use of e-government were discovered through a questionnaire survey, including the service content, timeliness, efficiency, effectiveness, and satisfaction assessment of the aforementioned various e-government means (government website, government client application, government WeChat, government Weibo, and government Douyin). Current issues with e-government in Zhejiang Province are realized by open questioning, recognizing the difficulties, and proposing some countermeasures. Right after the survey, twenty purposively selected respondents were communicated for interview and open questioning triangulating their response in the survey. Content analysis and descriptive coding were utilized for the qualitative part of the study.

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Research Locale

This study was conducted in Zhejiang, China's provincial administrative region. At the end of 2018, Zhejiang Province had jurisdiction over 11 prefecture-level administrative regions, including 11 prefecture-level cities, 20 county-level cities, 32 counties, one autonomous county, and 37 municipal districts. At the end of 2021, the resident population of the province was 65.4 million. Among them are 34.18 million males and 31.22 million females, accounting for 52.3% and 47.7% of the total population, respectively, and the urbanization rate is 72.7%.

Figure 2: *Map of China*

Source: Sougo Map

The Zhejiang government service network is the primary method of delivering e-government services in Zhejiang Province. It serves as the starting point for one-stop service as well. Its one-stop service, personal service, legal person service, department service, service list, good and negative evaluations, and other service columns are included in its network interface, which is rather straightforward. One-stop service is most often used to describe the service items that can be handled entirely online.

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Participants

There are 218 individuals and business owners representing various industries who have been chosen as respondents to the study from among four regional cities in Zhejiang Province: Hangzhou, Ningbo, Jinhua, and Wenzhou. Government departments supported the development of excellent relations with local government agencies. The table below shows the number of respondents:

Table 1: *Respondents*

Cities in Zhejiang Province	Total Population (IT professionals in the district)	Target Sample Size	Actual Sample Size
Hangzhou	3823	51	55
Ningbo	3752	50	54
Jinhua	3458	50	54
Wenzhou	3203	50	55
TOTAL	14236	201	218

Meanwhile, twenty participants were purposively selected for the interview and open questioning. They were communicated right after the survey and consent was sought if they would want to participate in the online interview.

Samples and Sampling Procedure

The researcher chose employees of Hangzhou government agencies from various functional departments for surveys and interviews, which complied with the purposive sampling approach, to analyze their attitudes and opinions toward e-government. The criteria set for the identification of qualitative interviews are as follows: Government employees of Zheijang Province; Assigned to do ICT-related roles within the government unit; Serving for at least three years; Willingness to participate in the study.

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Research Instruments

This study used in-depth methodologies like interviewing, questionnaires, and literature reviews. Questionnaires consist of 1) respondents' demographic information; 2) the impact of employing e- government to deliver services; the third section is an open inquiry that looks into the issues and solutions to using e-government to deliver services.

Reliability and Validity of the Instrument

The scale was primarily utilized with the reliability analysis. The scales in the questionnaire are mostly Questions 9 and 12, which include Questions 1 through 14, Questions 16 through 36, and Questions 13 and 52, respectively. Cronbach's Alpha values are all more than 0.9, indicating that the scale has a very high level of internal consistency, according to a review of 61 gathered documents using this method.

RESULTS AND DISCUSSION

Description of government Services in Zheijang, China

Figure 3 describes the use of e-government and the services the general public frequently visit. The data shows that they visit social security medical insurance services (135 out of 201 people), followed by living payment services (117 out of 201 people), and document reissue services (82 out of 201 people). The service most visited by professional and technical personnel is marriage and childbearing services (142 out of 218 people), followed by social security services (101 out of 218 people), and living payment services (208 people). These services are the basic needs of the citizens which shows that the e-government service in Zhejiang Province is very much targeted providing many conveniences and services for public life. The reason why Zhejiang e-government service reform can optimize services lies in "data sharing, data running, and interconnection". The reason why offline "one window acceptance" can be realized lies in the "one network management" of e-government (Huang and Yu, 2019). The smooth progress of Zhejiang's e-government service is closely related to the social atmosphere of technical support and digital survival in Zhejiang Province, a big data application province.

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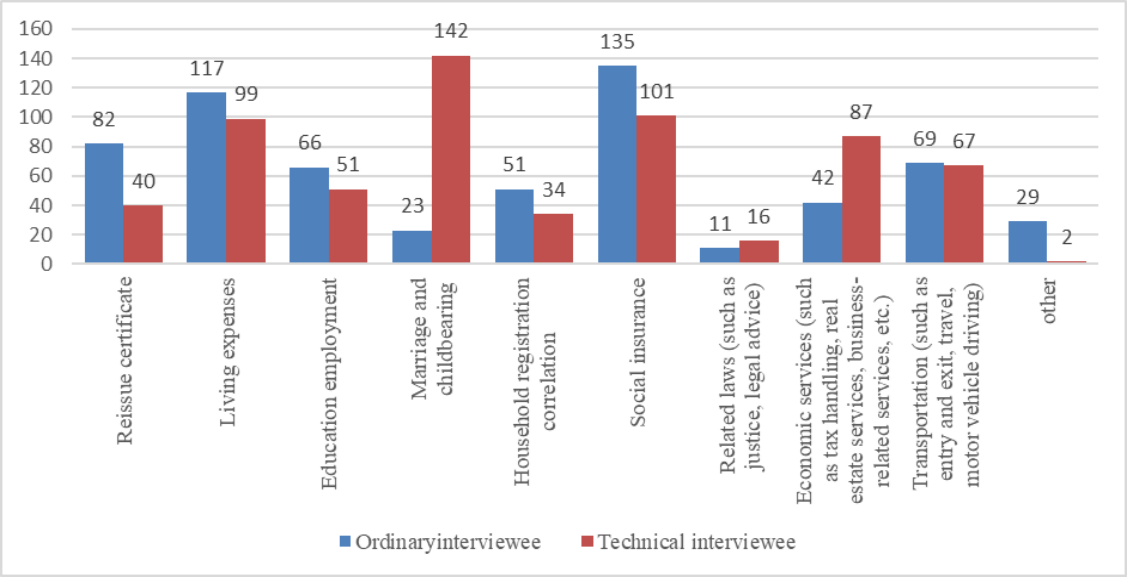

Figure 3: *Frequently Visited Services*
Source: Primary Data

Figure 4 shows that the general public gets more information through government websites (178 out of 201 people) compared to the technical interviewee or the IT professionals (89 out of 218 people), followed by government affairs Douyin (58 out of 201 people) and government affairs Weibo (49 out of 201 people). This shows that the public is more satisfied with the service of government affairs websites and government affairs Douyin. Among the technicians, Douyin of government affairs is the most used (146 out of 218), followed by Weibo of government affairs (119 out of 218) and micro-video of government affairs (108 out of 218), which shows that technicians are familiar with new e-government media and are more willing to accept and use it.

Access to E-government Services Used in Daily Life

Table 2 shows that generally, the recognition of technicians and the general public is relatively high, while the recognition of technicians (WM=2.91) for all kinds of e-government is higher than that of the general public (WM=2.79). This shows that

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the new e-government media has been recognized by the public and is competitive (Ullah et al., 2020).

Table 2: *Statistics on Comparison of Data of Using Different E-government Services*

E-government services are used in daily life.	Weighted Mean	
	Ordinary interviewee	Technical interviewee
Government Website (Zhejiang Government Affairs Network)	2.74	2.87
Government Client (Zhejiang Office)	2.96	2.96
Government affairs in Douyin (Zhejiang has positive energy)	2.79	2.92
Micro video of government affairs (Zhejiang micro video of government affairs)	2.73	2.91
Government Affairs Weibo (Zhejiang Government Affairs Weibo)	2.8	2.95
Overall	2.79 (Agree)	2.91 (Agree)

Use of E-government Services in Daily Life

Respondents from the general public (WM=2.74) and technicians (WM=2.87) agree with Zhejiang Government Website, and technicians have a higher degree of recognition. Moreover, the public and technical staff have reached a consensus on Zhejiang government website in some aspects, such as providing effective medical service channels (WM=2.88 for the general public and WM=2.87 for technical staff), and obtaining various service forms (WM=2.82 for the general public and WM=2.93 for technical staff) and completing the online payment (WM=2.8 for the general public and WM=2.9 for technical staff). The general respondents' recognition of online transactions (WM=2.63) and psychological support (WM=2.56) providing government programs is relatively low and thinking that Zhejiang Government Website provides online services for all government departments (WM=2.75). The data suggest that the service content of Zhejiang Website needs to be further optimized and online transactions and psychological support should be further strengthened and improved. Although it has implemented online service handling, it has not achieved all service coverage, and some services have not been handled online which brings inconvenience to people's lives. The findings concur with the study of Cooley (2017) that although China has achieved a high level of e-government development in terms of availability and integration of e-government services, it falls short of reaching the level of e-government which promotes e-participation.

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Government Clients

Government client refers to the new media platform for the government to release government information and provide online services. It mainly publishes government information such as major government decision-making arrangements, important policy documents, and leading important activities. It has also become a new channel for the government to provide services to society and interact with the public. This study refers to Zhejiang Office Client. The respondents from the general public and technical staff have a very high degree of recognition (WM=2.96) of Zhejiang Office's clients, which shows that Zhejiang Office's clients have very good user experience, especially in terms of communication with the government, which can be confirmed by feedback from ordinary staff (WM=2.98) and IT staff (WM=3) since Zhejiang Office is centered on serving the masses, and it is very convenient to use. This confirms how digital technologies influence co-production between the government and the public (Huang & Yu, 2019).

Government Douyin

Government Douyin refers to the application which mainly represents government agencies and officials and is established for public affairs. It is an official network interactive platform for collecting opinions, listening to public opinions, publishing information, and serving the public.

Technicians' recognition of government affairs Douyin (WM=2.92) is higher than that of ordinary people (WM=2.79). These data show that e-government in Zhejiang Province has unblocked the channels for the demands of the masses, promoted the rise of "online politics", and subverted the information dissemination mode of gradually reporting according to the administrative level. The findings support the study of Lu and Pan (2022) that Douyin's contents were produced by accounts affiliated with the government which uses videos for propaganda.

Government Micro-Video

The Government micro video refers to the short video clips which are recorded by the government through the video terminal, uploaded to the Internet, and then played and shared for 30 seconds, and the long video clips are generally about 20 minutes, with

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a wide range of contents and various video forms, covering small movies, documentary clips, DV clips, video clips, advertising clips, and others. Government affairs' short videos tend to be integrated into the content that netizens like to see and understand easily and make popular science interpretation and activity introduction in a fun and grounded way. This study refers to the Zhejiang government's micro-video.

As far as the micro-video of government affairs is concerned, technicians (WM=2.91) have higher recognition of the micro-video of government affairs than the general public (WM=2.73). This is mainly because information technology people are more familiar with new media technology such as micro-video. The same result happened in the recognition of the government uses micro-video frequently to effectively provide services which support the study of Zhu et al. (2021) that Micro-video was a key tool for the relationship between the government and its citizens, particularly during the pandemic.

This shows that the recognition of government micro-video among ordinary people is lower than that of information technology personnel, especially for older groups. As a new medium, micro-video is difficult to become the mainstream, but it is more popular among younger groups.

Government Weibo-Micro blog

Government micro-blog refers to Weibo, which mainly represents government agencies and officials and is established for public affairs. It is an official network interactive platform for collecting opinions, listening to public opinions, publishing information, and serving the public. Its main purpose is to build a network communication mode and platform of socialized participation in politics, discussion of state affairs, and politics through benign interaction with the public (Harwit, 2014). In Zhejiang, it refers to the government's micro-blog.

Data reveal that as far as government affairs on Weibo are concerned, technicians' overall recognition of Zhejiang government affairs on Weibo (WM=2.95) is higher than that of the general public (WM=2.8). Technicians think that Weibo can make the public participate in government affairs well (WM=3.03), while the general public's recognition of Weibo in government affairs is relatively low (WM=2.69). This is mainly because technicians have an advantage over ordinary people in the

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popularization and utilization rate of Weibo, and they are more adept at using new media.

All the above data show that the users' experience of e-government in Zhejiang Province is relatively good.

Impact of the Use of E-government Services

The evaluation of the impact of the use of e-government in the delivery of government services using the adjectival ratings of Efficiency, Effectiveness, Timeliness, and Satisfaction.

Table 3: *Scale Range, Verbal Description, and Qualitative Description Used in the Impact of the Use of E-government in the Delivery of Services*

Scale	Verbal Description	Qualitative Description
3.26-4.00	Strongly Agree (SA)	Very Efficient/Very Effective/ Very timely
2.51-3.25	Agree (A)	Moderately Efficient/ Moderately Effective/ Moderately Timely
1.76-2.50	Disagree (D)	Slightly efficient/ Slightly effective/ Somewhat timely
1.0-1.75	Strongly Disagree (SD)	Not Efficient/ Not Effective/ Not Timely

Construed in table 4, the impact of the use of e-government in the delivery of government service has a verbal result of Agree on the ordinary interviewee and technical interviewee with a weighted mean of 2.94 and 2.82 respectively. This implies that the general public and recipients of professional and technical personnel in Zhejiang Province provide standard service.

Table 4: *Statistics on the Impact of the Use of E-government in the Delivery of Government Services*

	Ordinary interviewee (Weighted Mean)	Technical interviewee (Weighted Mean)
Efficiency（WM)	2.85 (Moderately Efficient)	2.98 (Moderately Efficient)
Effectiveness（WM)	2.87 (Moderately Effective)	2.73 (Moderately Effective)
Timeliness（WM)	3.11 (Moderately Timely)	2.76 (Moderately Timely)
Overall	2.94 (Agree)	2.82 (Agree)

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The ordinary interviewee in terms of effectiveness and timeliness is higher than the technical interviewee with the result of 2.87 and 3.11 consecutively. However, in terms of efficiency, technical interview (WM=2.98) is higher than ordinary interviewee (WM=2.85). Technicians are more proficient in the use of e-government. The results reveal how the people perceived the impact of e-government services in the province. It highlights the quality service of the government through the use of technology which concurs with the findings of Li and Shang (2020). Their study reveals the e-government service quality: system quality, reliability, security, accessibility, information quality, service capability, interactivity, and responsiveness. The more people use e-services or express their intention to use them is a consequence of service quality, service value, and satisfaction (Li & Shang, 2020).

Efficiency

Both ordinary interviewees (WM=2.85) and technical interviewees (WM=2.98) are satisfied with the efficiency of e-government service. Ordinary people are most satisfied because e-government makes citizens run fewer errands (WM=3.1), and they can quickly handle services such as licenses online (WM=2.93). However, all government services that can be handled online (WM=2.29) have a low degree of satisfaction. Therefore, it needs to be improved and upgraded. To continue the progress of e-government in Zhejiang, as well as in China, it should consider formulating effective e-government policy and institutional mechanisms in various government agencies to integrate and share e-government applications across provinces and local governments (Sodhi, 2016).

Table 5: *Statistics on Efficiency of Zhejiang Government Services*

Government Service Provided by Zhejiang Government.	Ordinary interviewee							Technical interviewee						
	n=201	Strongly Agree	Agree	Disagree	Strongly Disagree	Not applicable	Weighted Mean	n=218	Strongly Agree	Agree	Disagree	Strongly Disagree	Not applicable	Weighted Mean
37. Government services can provide even transaction services.	F	39	126	7	1	28	2.73	F	71	83	15	30	19	2.72
	%	19.4	62.7	3.5	0.5	13.9		%	32.6	38.1	6.9	13.8	8.7	
38.	F	44	129	6	1	21	2.87	F	81	87	17	13	20	2.9

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Government service allows users to pay online immediately.	%	21.9	64.2	3	0.5	10.4		%	37.2	39.9	7.7	6	9.2	
39. The government website can quickly handle services such as license applications.	F	43	135	5	1	17		F	85	93	18	12	10	
	%	21.4	67.2	2.5	0.5	8.5	2.93	%	39	42.7	8.3	5.5	4.5	3.9
40. E-government service enables citizens to use government public resources at any time.	F	39	132	9	3	18		F	67	87	19	13	32	
	%	19.4	65.7	4.5	1.5	9	2.85	%	30.7	39.9	8.7	6	14.7	2.66
41. Use e-government to make people run fewer errands.	F	55	130	6	2	8		F	75	79	30	25	9	
	%	27.4	64.7	3	1	4	3.1	%	34.4	36.2	13.8	11.5	4.1	2.85
42. All government services can be handled online.	F	35	114	18	3	31		F	79	75	23	29	12	
	%	17.4	56.7	9	1.5	15.4	2.59	%	36.2	34.4	10.6	13.3	5.5	2.83
Efficiency（WM)		2.85 (Agree) (Moderately Efficient)						2.98 (Agree) (Moderately Efficient)						

Effectiveness

As delineated in table 6 the effectiveness of e-government services in Zhejiang Province is moderate with the result of WM=2.87 and WM=2.37 in ordinary interviewees and technicians, respectively. There is reliable information provided for citizens by the e-government services.

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Table 6: *Statistics on Effectiveness of Zhejiang Government Services*

Please evaluate the government service provided by Zhejiang provincial government.	Ordinary interviewee							Technical interviewee						
	n=201	Not applicable	Strongly Disagree	Disagree	Agree	Strongly Agree	Weighted Mean	n=218	Not applicable	Strongly Disagree	Disagree	Agree	Strongly Agree	Weighted Mean
43. E-government services can provide reliable news and information for citizens.	F	16	2	4	140	39	2.92	F	39	18	8	78	75	2.61
	%	8	1	2	69.7	19.4		%	17.9	8.3	3.7	35.8	34.4	
44. The public can give feedback on the governments concerns t through e-government.	F	17	3	3	137	41	2.91	F	28	17	19	73	81	2.74
	%	8.5	1.5	1.5	68.2	20.4		%	12.8	7.8	8.7	33.5	37.2	
45. The government website provides specific procedures for handling different government services.	F	14	3	2	137	45	2.98	F	20	18	26	85	69	2.76
	%	7	1.5	1	68.2	22.4		%	9.2	8.3	11.9	39	31.7	
46.E-government service can make citizens better participate in public management.	F	19	2	3	132	45	2.91	F	28	19	17	88	66	2.67
	%	9.5	1	1.5	65.7	22.4		%	12.8	8.7	7.8	40.4	30.3	
47. E-government service can enable the government to accurately respond to the needs of the public.	F	28	3	8	126	36	2.69	F	16	19	29	82	72	2.8
	%	13.9	1.5	4	62.7	17.9		%	7.3	8.7	13.3	37.6	33	
48. Using e-government services can effectively solve public problems.	F	20	3	8	130	40	2.83	F	22	14	28	81	73	2.78
	%	10	1.5	4	64.7	19.9		%	10.1	6.4	12.8	37.2	33.5	
Effectiveness（WM)	2.87 (Agree) (Moderately Effective)							2.73 (Agree) (Moderately Effective)						

The ordinary interviewees (WM=2.91) show more identification with the public by providing feedback on the government concerns through e-government. The moderate effectiveness of the e-government services of the province shows that there is still room for improvement. It concurs with the findings of Tan et al. (2013) that e-government services in China are not that advanced to address the actual expectations of the communities. Some limitations need to be addressed for the community to receive its full benefits.

Timeliness

Table 7 shows that the ordinary interviewee (WM=3.11) and technicians (WM=2.76) are moderately satisfied with the timeliness of Zhejiang's e-government service. The ordinary interviewee strongly agreed that e-government saves time in handling business

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(WM=3.47), provides the latest information (WM=3.04), can simplify the working process (WM=3.03), and serves the citizens promptly (WM=2.91).

Table 7: *Statistics on Timeliness of Zhejiang Government Services*

Government Service Provided by Zhejiang Government.	Ordinary interviewee							Technical interviewee						
	n=201	Not applicable	Strongly Disagree	Disagree	Agree	Strongly Agree	Weighted Mean	n=218	Not applicable	Strongly Disagree	Disagree	Agree	Strongly Agree	Weighted Mean
49. E-government provides timely services to the public.	F	18	2	3	136	42	2.91	F	28	17	19	87	67	2.68
	%	9	1	1.5	67.7	20.9		%	12.8	7.8	8.7	39.9	30.7	
50. E-government services can provide the latest information.	F	11	2	3	137	48	3.04	F	13	26	25	85	69	2.78
	%	5.5	1	1.5	68.2	23.9		%	6	11.9	11.5	39	31.7	
51. E-government services can simplify business processes.	F	14	1	1	134	51	3.03	F	18	32	14	88	66	2.7
	%	7	0.5	0.5	66.7	25.4		%	8.3	14.7	6.4	40.4	30.3	
52. E-government service saves my business processing time.	F	12	2	0	53	134	3.47	F	18	21	25	61	93	2.87
	%	6	1	0	26.4	66.7		%	8.3	9.6	11.5	28	42.7	
Timeliness（WM）	3.11 (Agree) (Moderately Timely)							2.76 (Agree) (Moderately Timely)						

The timeliness of the government services delivered during the pandemic is not only the basis of the effectiveness of e-government services. It should be coupled with the quality and credibility of information and the proper coordination with a local authority for the information to be useful for the citizens (Mensah et al., 2021; Yang et al., 2022).

Client Satisfaction

The ordinary interviewee and technical interviewee are both satisfied with the e-government service in Zhejiang Province, with 97% and 78% consecutively. Zhejiang E-government effectively compartmentalizes the information through service networking and provides a technical platform for government reform among the provinces, cities, and counties.

During the pandemic, China has shown the effective role of e-governance in COVID-19 while promoting sustainable development (Ullah et al., 2021) which would be the basis of citizen satisfaction. The satisfaction and effectiveness of e-governance

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will just depend on the perception of the citizens on how they accept the services provided by the government.

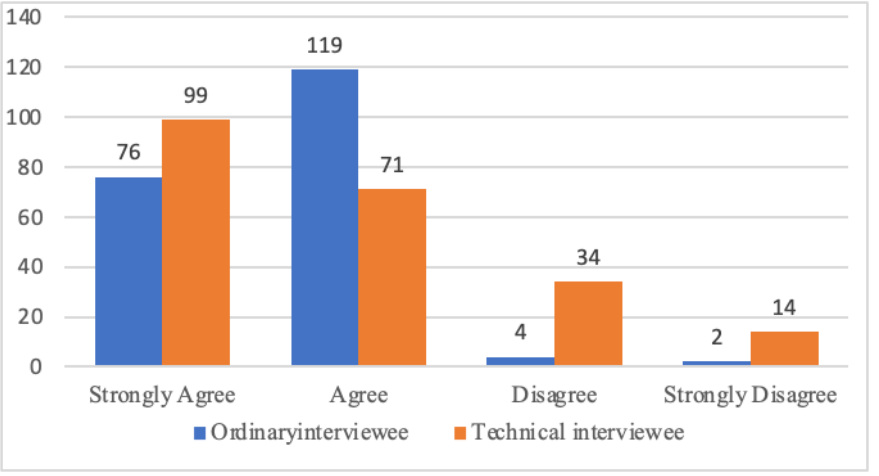

Figure 5: *Overall Evaluation of E-government Service Client Satisfaction in Zhejiang Province*
Source: Primary Data

Hypothesis Testing

To verify the relationship between the use of electronic means of services and the impact of the use of electronic means of services, this study verified this hypothesis, to wit;

H_1: E-government has strengthened information dissemination.

Table 8: *Summary of Chi-Square Tests Results on the Use of E-government Services and Information Dissemination*

	Pearson chi-square value	P-value
Regular use of Electronic Platform and Government *Weibo*	96.100	.000
Regular use of Electronic Platform and Government *Micro-video*	103.778	.000
Regular use of Electronic Platform and *Zhejiang Office Client*	106.032	.000

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To test the relationship between the use of electronic services and the impact of the use of the Government Weibo, Micro Video, and Zhejiang Office Client the Chi-Square test was utilized. The Pearson Chi-square value of 96.100 with the p-value < 0.001 indicates that the use of e-government has strengthened the provision of government service by Weibo. Therefore, the hypothesis is rejected. While the Pearson Chi-square value of 103. 778 (p-value < 0.001) reveals that the use of e-government also strengthened the government's use of micro-video to disseminate the latest information on COVID-19. Lastly, the Pearson Chi-square value of 106.032 (p-value < 0.001), likewise, rejects the null hypothesis which indicates that the use of e-government has strengthened the Zhejiang-Li Client to obtain the needed information for citizens regarding COVID-19.

The effectiveness of these e-government platforms of services during the pandemic cannot be denied. Its impact on the citizens will just depend on the quality and credibility of information they provide, particularly COVID-19 information (Mensah et al., 2021). Deficiency and deviations from the quality and credibility of the government information will cause users or the citizens to doubt the usefulness of such information and the effectiveness of the platform.

Summary table for hypothesis testing for E-government service satisfaction and E-Government Service Impact. The measurement of the influence of the use of e-government and the impact of the delivery of services is shown below;

H2: The use of e-government services significantly influences the impact of e-government services.

Table 9: *E-government Service Satisfaction (Q-14), E-government Service Use (Q12), and E-government Service Impact (Q13) Correspondence Table*

E-government service use (Q12) and E-government service impact (Q13)	E-government service satisfaction			
	Dissatisfied	Satisfied	Very satisfied	Activity margin
Not applicable	2	15	4	21
Strongly Disagree	1	0	0	1
Disagree	1	5	1	7
Agree	1	76	51	128
Strongly Agree	1	23	20	44

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Activity margin	6	119	76	201
Pearson chi-square value	45.524			
P-value	.000			

As can be seen in table 9, Q14's satisfaction is close to Q12-13's satisfaction and the satisfaction is close to each other. Q14's dissatisfaction is closer to Q12-13's dissatisfaction. Pearson Chi-square value=45.524 and the corresponding significance value P = 0.000 < 0.05, that is, the original hypothesis is rejected, which indicates that there is a significant relationship between the use of electronic services and the impact of electronic services.

Challenges encountered by Zhejiang Province in the of electronic means in the delivery of government services

Ying (2018) pointed out the following problems in the construction of e-government in China: The e-government platform does not have a unified construction planning and technical guidance; ignoring the core of e-government construction which is all about the development and utilization of information resources; reform needs time to be accomplished as the urban development in China is uneven; there is a threat in information security.

Some people still have a passive or utilitarian mentality that does not fully use the benefits of various platforms and does not demonstrate the results of collaboration and teamwork (Yue, 2019).

Lack of qualified technical staff, information security risks, a need for further function optimization, unbalanced regional development, a lack of standardization, and insufficiently efficient services for special groups like the elderly. In the upcoming evolution, these must all be overcome. It makes overall arrangements significant as a local model for local governments in China to build a smart government with good governance.

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CONCLUSION AND RECOMMENDATIONS

The majority of government services, including those for marriage and childbirth, social security medical insurance, living payment, document reissue, and other necessities of daily life, are offered by the Zhejiang e-government. The Zhejiang provincial government's website offers a wide range of services that are comparatively complete, enable browsing by the general public, and efficiently address everyday needs. Additionally, it facilitates public comments, offers information on government services, and is accessible anytime. It has become a crucial method for citizens to engage in governmental matters.

Zhejiang's e-government service is relatively efficient in terms of the effects of employing them. E-government services can help the public receive fast services, correct responses to their demands, the most recent information, streamlined business procedures, and time-saving business processing. Government micro-video, Government Weibo, Government Zhejiang Office client, and Government micro-video efficiently disseminate the most recent information about government services. Zhjiang's e-government service's overall arrangements is significant as a local model for local governments in China to build a smart government with good governance.

It is advised that Zhejiang Province may deepen reform and improve services in the future based on enhancing e-government services in the following areas: The Zhejiang administration may push e-government reform down to the grassroots level. E-government reform may be incorporated into the database of the government service network to give rich first-hand data for higher-level government decision-making. It is possible to progressively create a standardized, streamlined, efficient, transparent, and comprehensive process by adopting joint examination and approval in all directions. It will replace the fragmented examination and approval process focused on functions.

Meanwhile, the government may modernize outdated beliefs, establish mechanisms of cooperation and trust among various levels and functional departments, and gradually cultivate a collaborative organizational culture, shared and seamless and focused on the needs of the people with the aid of theoretical preaching and experience sharing, and quality development.

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Lastly, network monitoring may also include keeping an eye on internal staff behavior, data transmission, and unusual network activity, in addition to keeping an eye out for outside intruders. The region's infrastructure for support networks and data disaster backup may be developed, and the region's capability for handling emergencies may be improved.

References

Barrenechea, M. J. & Jenkins, T. (2014). *E-government or Out of Government*. Open Text Corporation, Waterloo. Ontario, Canada.

Bawan, O.M., Marcos, M.I.P. and Gabriel, A.G. (2017). E-Participation of Selected Professional Students in the Governance of Cabanatuan City in the Philippines. *Open Journal of Social Sciences*, 5, 126-139. https://doi.org/10.4236/jss.2017.512010.

Bem C. (2010). Social Governance: A Necessary Third Pillar of Healthcare Governance. *Journal of the Royal Society of Medicine*, 103(12), 475–477. https://doi.org/10.1258/jrsm.2010.100315

Bernhard, I. (2014). *E-government and E-governance : Local Implementation of E-Government Policies in Sweden* (Ph.D. Dissertation, KTH Royal Institute of Technology). Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:hv:diva-6793.

Bhunia, P. (2017). *Zhejiang Province in China piloting the 'At Most One Visit' Scheme for Streamlined Government Service Delivery*. Open Gov, Available online: https://opengovasia.com/zhejiang-province-in-china-piloting-at-most-one-visit-scheme-for-streamlined-government-service-delivery/.

China Internet Network Information Center (CNNIC). China Internet Network Information Center. *45th Statistical Report on Internet Development in China* [EB/OL] H T T P: //www.c a c go v c n/2020-0 4/2 7/c_1 5 8 9 5 3 5 4 7 0 3 7 8 5 8 7.h t m, 2020-0 4-2 8/2020-0 5-2 3

Cooley, A. (2018). Examining Development of E-Government in Russia and China: A Comparative Approach, *International Journal of Public Administration*, 41:11, 899-908, DOI:

Gabriel, A.G. (2017). Transparency and Accountability in Local Government: Levels of Commitment of Municipal Councillors in Bongabon in the Philippines. *Asia Pacific Journal of Public Administration*, 39:3, 217-

eISSN 2600-9374

223, DOI: 10.1080/23276665.2017.1368902.

Gabriel, A, Castillo, L. (2019). *Transparency and Accountability Practices of Local Government Units in the Philippines: A Measurement from the Ground.*

Gao, X., & Tan, J. (2020). From Web to Weber: Understanding the Case of "One-Go at Most" as ICT-Driven Government Reform in Contemporary China. *China Review*, 20(3), 71–98. https://www.jstor.org/stable/26928112.

General Office of Zhejiang Provincial People's Government. (1996). Detailed Rules for the Implementation of *Zhejiang Government Information Work [J] Informatization Construction*, (2): 6-11.

Harwit, E. (2014). The Rise and Influence of Weibo (Microblogs) in China. *Asian Survey*, 54(6), 1059–1087. https://doi.org/10.1525/as.2014.54.6.1059.

Huang, B. & Yu, J. (2019). Leading Digital Technologies for Coproduction: the Case of "Visit Once" Administrative Service Reform in Zhejiang Province, China. *Journal of Chinese Political Science.* 24. 10.1007/s11366-019-09627-w.

Li, Y., & Shang, H. (2020). Service Quality, Perceived Value, and Citizens' Continuous-Use Intention Regarding E-Government: Empirical Evidence from China, *Information & Management*, 57(3), 103197, ISSN 0378-7206, https://doi.org/10.1016/j.im.2019.103197.

Ma, L. (2019). The Current Situation, Challenges, and Prospects of Short Videos of Government Affairs [J]. *E-government*, 2019 (7): 2-10.

Mensah, I. K., Adams, S., Adjei, J. K., & Mwakapesa, D. S. (2021). Drivers of Government Adoption Amidst COVID-19 Pandemic: The Information Adoption Model (IAM) Approach. *Information Development*. https://doi.org/10.1177/02666669211010872.

Sodhi, I. S. (2016). E-Government in China: Status, Challenges, and Progress. In I. Sodhi (Eds.), Trends, Prospects, and Challenges in *Asian E-Governance* (pp. 36-54). IGI Global. https://doi.org/10.4018/978-1-4666-9536-8.ch002.

Tan, M., Xiaoai, D., Qiushi, Y, & Chen, C. (2013). An Investigation of e-Government Services in China. *Electronic Journal of Information Systems in Developing Countries*. 57. 10.1002/j.1681-4835.2013.tb00407.x.

Ullah, A., Pinglu, C., Ullah, S. et al. (2021). The Role of E-Governance in Combating COVID-19 and Promoting Sustainable Development: A Comparative Study of China and Pakistan. *Chin. Polit. Sci. Rev.* 6, 86–118 (2021). https://doi.org/10.1007/s41111-020-00167-w.

U.S. White House. (2021). *Digital Government: Building a 21st Century Platform to Better Serve the American People*. [EB/OL]. [2021-05-21].

eISSN 2600-9374

https://obamawhitehouse. archives.gov/sites/default/files/omb/egov/digital-government.html.

United States Congress. (2021). E-Government Act of 2002. Accessible at https://www.govinfo.gov/content/pkg/PLAW-107publ347/pdf/PLAW-107publ347. pdf

Xunwen, P. (2021). *"People's Daily Overseas Edition"* (July 14, 2021, 08th Edition).

Yang, T., Shen, X., Yang, Y. et al. (2022). Timeliness of Information Disclosure During the Low Transmission Period of COVID-19: A Resident-Level Observational Study in China. *BMC Public Health*, 22, 415. https://doi.org/10.1186/s12889-022-12804-x

Zhu, Y., Dong, J., Qi, X. and Deng, J. (2021). "Intention to Use Governmental Micro-Video in the Pandemic of COVID-19: An Empirical Study of Governmental Tik Tok in China," *2021 6th International Conference on Inventive Computation Technologies* (ICICT), 2021, pp. 976-979, DOI: 10.1109/ICICT50816.2021.9358780.

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