Research on the Realization Mechanism of Online Government Service Convenience——Take Tianjin Economic Development Area as an Example

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Abstract. The reform of government services in Tianjin Economic Development Area is an important part of the coordinated development of government services in the Beijing-Tianjin-Hebei region. From the perspective of service convenience, the effective ways to improve the convenience of online government service in Tianjin Economic Development Area are explored. The study finds that scenario-based services, customized services for user portraits, approval process remodeling, and data sharing and mutual recognition can help to improve the convenience of online government services.

Keywords: Service convenience; Online government services; Business environment; Tianjin Economic Development Area(TEDA); Beijing-Tianjin-Hebei coordination

1 Introduction

The reform of government services in Tianjin Economic Development Area (TEDA) is put forward under the background of the coordinated development of Beijing-Tianjin-Hebei region extending to the field of the government service, which responds to the need of playing the leading role in the reform experiment of national economic development areas, and has important theoretical value and practical significance. In December 2019, The State Council Office of the People's Republic of China issued the Pilot Work Plan for One-Network Government Services in the Beijing-Tianjin-Hebei region, putting the coordinated development of government services in the Beijing-Tianjin-Hebei region on a fast track.

This paper takes TEDA as an example to examine the results of the government service reform in Beijing-Tianjin-Hebei Economic Development Area, which helps to promote the deepening development of the theoretical view of the convenience of government service, and provide reference for the practice of government service reform. On the basis of the conceptual framework of the convenience of government service, this paper uses the case study method, takes the reform of government service as the research object, focuses on the analysis of the ways to improve the convenience of government services in the digital age.

2 Theoretical Basis

2.1 Literature Review

In 2002, Berry, Seiders and Grewal proposed the concept of service convenience, which refers to the subjective perception of the time and effort users spend when purchasing or using services[1]. Since then, this concept has been widely adopted by the academic circle, defining the service convenience as the non-monetary consumption of users when purchasing and using the services, such as time and energy[2]. Berry According to the different links of service, "service convenience" is divided into five dimensions: Decision Convenience, Access Convenience, Transaction Convenience, Benefit Convenience and Post-benefit Convenience. On this basis, some scholars have also developed the scales of service convenience. For example, Seiders et al based on the data of American retail services have verified the scale proposed by Berry et al[3]. Chan et al. measured the "service convenience" of the fast food industry in Taiwan by using the measurement standards proposed by Berry and Seriders et al[4]. In addition, Hua and Salamal also used the five dimensions proposed by Berry to measure and analyze the convenience of online services[5], Ling et al brought the characteristics of the electronic platform into the "convenience of service" measurement system[6].

However, the research on the convenience of government service in China is still in its infancy. Huiping learned from "the Guide to Technical System Construction of Internet + Government Service", and evaluated the convenience of urban government affairs and business environment from four aspects of commitment time limit, form of handling, number of materials and number of attendance[7].Starting from the whole process of online administrative examination and approval affairs, Diyang constructed a set of analysis dimension system of the convenience concept of online administrative examination and approval, which is the accessibility of online examination and approval items, online search, consultation, requirement preparation, examination and approval process, and the convenience of examination and approval results[8].

2.2 The conceptual framework of the online government service convenience

According to the existing academic research results of service convenience, combined with the online government service situation, this paper constructs the online government service convenience concept framework by four dimensions.

(1) Online service accessibility. Online services accessibility refers to the time and energy spent by clerks to obtain online government services. The first is "items availability", that is, the coverage of the online government service platform. The second is "website stability", that is, the stability of services provided by government websites.

(2) Item retrieval convenience. The convenience of matter retrieval refers to the time and energy spent by the clerk searching for service information. First, it is time-consuming to search for information, that is, the time and energy spent for enterprise staff to find the entry to be handled on the online government service platform. Second, it is the ease of information search, attention to whether the basic information retrieval is convenient. Third, it is the clarity of item classification, which refers to whether the classification mode of the government

service network platform is scientific and whether the presentation mode is clear.

(3) Material preparation convenience. The convenience of material preparation refers to the time and energy spent by the clerk in preparing the essential materials for administrative examination and approval or other government services. First, the number of materials, which has received attention since the early stage of the reform of administrative examination and approval. Second, the clarity of the list of materials, that is, whether the list of materials can cover all the required parts and be clearly stated. Third, the completeness of the material description refers to the specific requirements for the filling content and naming format of the materials.

(4) Service process convenience. The convenience of the service process refers to the time and energy spent by the clerk in the process of government service. First, the period of service supply refers to the period when the online government service platform receives the materials and accepts the service matters. Second, the clarity of the service process refers to whether the service process guidance for online service is clear and accurate enough. Third, the reasonable waiting time for online processing refers to the time used between the submission of materials and the receipt of the online government service results. Fourth, the response effectiveness of the service personnel refers to whether the backstage service personnel can keep online during working hours, and answer questions timely and effectively.

3 Methodology

In order to explore the convenience of government services in state-level economic development areas under the background of the coordinated development of Beijing, Tianjin and Hebei, Tianjin Economic Development Area(TEDA) was selected as the research object.

Case selection was mainly based on the two reasons. First, the significance of the results.The comprehensive development level of TEDA is at the forefront of the state-level economic development areas, which is of great significance for promoting the integrated development of the business environment in the Beijing-Tianjin-Hebei region. By analyzing the representative government service reform measures of TEDA, it is helpful to enrich and deepen the convenience theory of online government service. Second, the integrity of the elements. The research on the realization mechanism of convenient government services revolves around "online service accessibility" "item retrieval convenience"" material preparation convenience"and "service process convenience " four dimensions. Thus the case should have the specific performance of Beijing-Tianjin-Hebei coordination and the optimization of business environment, and conform to the general characteristics of online government services.

This study uses multiple data sources to verify each other, including policy documents, statistical data, website data and field interviews. In terms of the first hand information，a field survey on the government service hall of TEDA, 3 leaders in charge of government service, 6 window staffs and 10 enterprises were interviewed randomly about 15-20 minutes per person.

4 Reform measures analysis

4.1 Online service accessibility: the service scene construction based on the platform

First of all, improve the rate of government service matters in economic development areas, and broaden the "items availability". The TEDA service platform administrative licensing matters network rate reached 100%, can complete more than 130 business online declaration, and meet the demand of most of the enterprise, reducing the approval hall of business costs effectively. For example, sino-foreign joint venture trading companies common in economic development areas need to apply for comprehensive work for approval because of the flexible working hours of their sales staff. In the past, special personnel had to be sent to the examination and approval hall to apply for such matters, but now you only need to log on the government service platform of the economic development area to quickly find the entrance, as convenient as "shopping Taobao".

Secondly, the government service platform realizes multiple entrances and one-time convenient login, improving the "website accessibility".The platform integrates Wechat public account, PC terminal, mobile terminal, 25201111 entrances, to build an advanced government service platform of "multi-entrance entry, one platform management", which effectively avoids the problem of multiple jumps to find the online service entrance. In addition, the relevant modules can also provide a series of supporting services such as online booking, declaration, progress inquiry, evaluation and feedback.

Finally, the service scenarios should be enriched based on the platform, promoting the in-depth integration of the online platform and the physical platform. According to the use objects, the platform is divided into the front-end declaration system used by the sponsor, the assistant system used by the agent service personnel and the background approval system used by the approval staff, so that the approval flow, service flow and data flow match each other. In this way, the examination and approval declaration standard become convenient, and the interactive experience get more simple and friendly.

4.2 Item retrieval convenience : the accurate service based on user "portrait"

Due to the unique location advantages of TEDA, there are many favorable policies for enterprises in specific fields or scale. However, in the process of obtaining preferential policies, there are still the following four types of common problems. First, major policies cannot be timely notified to the corresponding enterprises. Second, it is time-consuming and laborious for enterprises to find corresponding policies at various levels. Third, it is difficult for enterprises to evaluate the compatible policies. Fourth, they cannot find the way to declare and have no place to consult. At the beginning of 2021, in line with the concepts of problem-oriented and service-oriented, "TEDA Enterprise Service Cloud" launched the policy intelligent selection function, opened the government and enterprise information channel through the scenario-based application mode, and provided enterprises with more accurate and fast services. See Table 1 for details.

The function depends on economic development area big data application and algorithm model by independent research and development, through granular analysis of policy documents of economic development area of the country, Tianjin, Binhai new area and other

levels. It can provide nearly 500 policies for enterprises, accurately matching and actively push, to solve the enterprise pain points for the policy "hardly find, difficult understand and declare". Enterprises only need to log in the "TEDA Enterprise Service Cloud" for simple registration, and they can complete the whole process operation of enterprise portrait, policy intelligent selection, and one-key declaration. Under the support of this function, the enterprise management personnel find the corresponding business entrance without laborious search, can be directly through the website daily push know matching degree of high policy information, and provide a key on the page declaration entry enterprise policy application, for the enterprise to enjoy policy with great convenience.

Table 1. The "Intelligent selection of policy " function

Function	Instruction
Quantitative matching	Through the numerical presentation of the fit between the characteristics of the enterprise and the policy requirements, the enterprise may apprehend at a glance
Accurate push	And the latest policy with high fit degree is accurately recommended to enterprise users every day, so that the transfer time of the latest policy to enterprises is not more than 24 hours
Tailored detail reading	Different from the regular article summary, for each enterprise user, the key content of the policy is refined to help them read the policy quickly
Association recommendation	Combined with the policy preferences of users, similar policies at all levels with high relevance are recommended to help enterprises make full use of the policies at all levels
Peer attention	Recommend the policies that enterprises in the same industry are paying attention to to help their peer bench-marking
Declaration guidance	Collect all levels of all kinds of preferential enterprise evaluation declaration matters, clear declaration process, set various declaration interfaces, timely and accurate direct to enterprise users
Open across the country	It provides policy matching services for enterprise users across the country, and uses big data to provide enterprises with write-free information introduction and intelligent recommendation services

4.3 Material preparation convenience: the intelligent approval around "one thing"

"Reducing materials" has always been a key measure to reduce the "administrative burden" of service objects in the reform of government services. The "joint examination and approval and registration system of certificates and licenses" has made a breakthrough in reducing the number of materials. Under the traditional examination and approval mode, due to the different functional departments responsible for, we need to handle the certificate and license separately, and prepare two sets of materials. The joint examination and approval registration system of business license and license allows the clerk to apply for part of the qualifications required in the business operation, in which accept the application materials uniformly, and issue the business license and license simultaneously. First, the method integrates the approval process according to the initial steps of "doing one thing at once"; the second is to complete the data sharing through the information flow within the government, changing multiple sets of materials into a set, effectively avoiding the phenomenon of repeated delivery of the same materials by the staff, and greatly reducing the quantity of materials.

The online pre-examination module of "one thing package" came into being. On the premise of integrating the decentralized examination and approval items, the intelligent examination and approval system will first analyze the declaration information submitted by the clerk for data, and then compare the list of materials and the filling requirements, finally automatically match, fill in the repetitive application requirements and the filling content. In this mode, the material information is changed from manually filled in by the staff to automatic matching by the system, which fundamentally breaks the phenomenon of multiple material submission due to the unclear list of materials and the incomplete material description information.

4.4 Service process convenience: the governance on data sharing and mutual recognition

TEDA through the process simplification, material digitalization, interactive intelligence, most of the matters "online availability" reaches 100%. By fully using the signature stamp of the electronic business license, the electronic seal of the registration authority can be obtained in the audit process, and the seal of the business license and notice can be completed. The whole process only needs one working day, and the waiting time is in line with the clerk's psychological expectation of the difficulty of handling the matter. In especial, the legal effect of digital materials, help to further simplify the service process, and improve other matters "online", which conforms to the requirements of the legal form and content of electronic certification, electronic seal, electronic signature, electronic archives and paper certification, physical seal, handwritten signature or seal. The files have the same legal effect, can be used as a part of the application materials, through the government information sharing platform to obtain or check relevant information or documents, so the applicant can be exempted from submission, truly achieve "the whole network".

5 Reform enlightenment

5.1 Strengthen data sharing

First, break down the barriers to regional and departmental interests, and establish an interconnected cloud big data platform. The Beijing-Tianjin-Hebei Economic Development area should smooth the data flow of cross-regional and cross-field matters to realize the interconnection and sharing. Second, speed up high-level data sharing and optimize customized service functions. It is necessary not only to continuously mine the potential user characteristics in the shared data to form a more accurate and comprehensive "user portrait", but also to analyze the matters that the enterprise or individual may need to handle based on the "user portrait", and carry out accurate push in the user's personal center to serve forwardly. Third, block-chain technology enables data sharing to improve the credibility of data security. In the Beijing-Tianjin-Hebei region, each economic development area can be a data node to realize the single node upload of enterprise and personal information data, and all nodes synchronization.

5.2 Optimize the function of "AI + service guidance "

First, the online government service platform basically explains the work process in the form of setting a separate page, and the clerks have to jump back and forth in the explanation page and the operation page. Therefore, the processing flow chart should be displayed at the top of

the item handling page, and the current processing process should be displayed. At the same time, the operation guidance of the whole process should be set up to guide the clerks to operate with the "hand in hand" of the digital image. Second, technical means should be introduced to optimize the online guidance. For example, through the remote desktop screen sharing way, the materials can be checked. In the government service platform, remote control can be developed, so that the real customer service can not only guide the clerk by voice, but also realize the remote auxiliary interface controlling. Third, establish the work process of intelligent guidance, in the consulting service, matters entrusted, customized scheme, tracking handling, result delivery, service evaluation and other aspects to make detailed provisions, at the same time the implementation of unified ledger management.

5.3 Enhance the digital literacy of cadres

On the one hand, we should break the psychological barrier and build a government service team that everyone understands technology. No matter whether the government staff serve the online government platform, they should participate the business training of online government services to understand the current reform direction of online government services in the local regions. On the other hand, we should update the service concept, supply the services forwardly, and draw close to the digital transformation actively. Especially in the offline government affairs service hall staff, more to really set up the digital consciousness, in the good office materials at the same time, fusion line service window and online government service propaganda window, in the process of acceptance, the clerk explains the online handling method to the applicant, so that the applicant can personally feel the convenience of online handling.

5.4 Improve the evaluation and assessment index system

First, enrich the dimensions of user satisfaction evaluation. In the dimension of existing investigation indicators, the two processes of item retrieval and material preparation that have a great impact on user experience are fully considered, especially the ease of searching to-do items, the clarity of item classification, the completeness of the list of materials, and the clarity of material description are investigated. Second, the comprehensive utilization of the evaluation of the related data. Using the data technology, analyze the evaluation data, to mine the demands and expectations of enterprises and the public for government services, so as to find the focal point and entry point to further improve the precision level of user service supply. Third, to build and improve the assessment system based on user satisfaction. For the repeated bad reviews, it should be immediately investigated and rectified, and special personnel should be arranged to return the visit in time to ensure that the problems are solved, promoting the continuous improvement of user satisfaction.

6 Conclusions

In this case study, the effective ways to improve the convenience of online government services are investigated from four dimensions: online service accessibility, item retrieval convenience, material preparation convenience, and service process convenience. The service scene construction based on the platform is found to have the priority weighting on the online service accessibility. The accurate service based on user "portrait" is found to be influential for

the item retrieval convenience. The intelligent approval around "one thing" is of obvious influence on the material preparation convenience. The governance on data sharing and mutual recognition has the significant influence on the service process convenience. In addition to corresponding to what is discussed in the current literature, this case study promote the construction of the conceptual framework of the online government service convenience. Moreover, the study also provides practical implications to discuss how some of the inconvenience of online government services in the economic development area can be reduced so that the business environment can be further enhanced to promote the coordinated development of the Beijing-Tianjin-Hebei region.

There are also some limitations to this research. The researchers are the main instrument in the data collection process. Potential researcher biases could occur if the researchers focus too much on some issues during the interviews. In addition, although the data are gathered from multiple sources to increase external validity, the proposed frameworks are still developed under a single case study in the context of TEDA. Future research can employ other case studies for further investigation and test the proposed frameworks. The findings and the proposed frameworks of the research can also be examined and extended in the different contexts of online government services. Lastly, this research is expected to enhance the current understanding of the reform of online government services and contribute to the online government services from another perspective.

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