Satisfaction Analysis of "Run Once" Reform in Zhejiang Province Based on Partial Least Squares Path Model

Jiazhen Tian[1], Ying Xu[2,*]

[1]*School of Business Administration, Ningbo University of Finance and Economics, Ningbo, China*
[2]*College of Digital Technology and Engineering, Ningbo University of Finance & Economics, Ningbo, China*
*Corresponding Author

Abstract: The "Run Once" reform in Zhejiang Province leverages internet and big data technologies to enhance the efficiency of government services. Based on questionnaires from citizens and interviews with enterprises in Hangzhou, Wenzhou, Quzhou and Taizhou, this paper uses partial least squares (PLS) path model to evaluate the satisfaction levels. The results show that the greatest influence on public satisfaction is the service effect and process, followed by the policy awareness. It is recommended to strengthen personnel training, establish data-sharing mechanisms, and deepen "Internet + Government Services" by diversifying publicity channels and streamlining procedures through the "Single-Window & Online Platform" model, thereby bridging the "last mile" in public service delivery and advancing the reform to a deeper level.

Keywords: Partial Least Squares (PLS) Path Model; Run Once; Questionnaires; Satisfaction

1. Introduction

Comprehensively deepening reform serves as the breakthrough and pioneering element within the "Four Comprehensives" strategic blueprint. In Zhejiang Province's "Run Once" reform, technologies like big data and internet have emerged as key enablers. However, data silos and fragmentation persistently hinder reform progress [1]. Thus, establishing Zhejiang's exemplary model of "Run Once" reform—streamlining government processes to amplify benefits for businesses and citizens—is imperative to drive systemic transformation. By the end of 2024, 80% of government services were covered by the reform, with an 87.9% implementation rate and 94.7% public satisfaction. The Zhejiang Government Service Portal enabled online applications for 80,856 items (including 827 provincial, 9,801 municipal, and 70,228 county-level), achieving online accessibility rates of 86.1%, 77.4%, and 76.9%, respectively. The reform has basically achieved the goal of "one visit is the rule, multiple trips the exception", significantly enhancing public trust, convenience, and well-being. This paper conducted surveys with 800 questionnaires distributed, 783 valid questionnaires collected (97.9% valid response rate), and interviews with citizens, businesses, and officials in Hangzhou, Wenzhou, Quzhou, and Taizhou, employing descriptive statistics and satisfaction modeling to derive conclusions [2].

2. Data Collection

This paper examines policy implementation challenges and constraints in Zhejiang's "Run Once" reform through field investigations conducted in Hangzhou, Wenzhou, Quzhou, and Taizhou, incorporating feedback from both citizens and enterprises. The findings provide empirical evidence for targeted policy optimization to enhance service satisfaction and deepen administrative reforms. The research methodology integrates survey data from public respondents, comparative analysis of provincial reform benchmarks, and international best practices in government data sharing. In the pilot regions, we conducted in-depth interviews with corporate executives from relevant enterprises, officials from the Municipal Institutional Organization Commission (Administrative Approval Service Management Office), representatives from related government departments, and frontline staff at service centers. Using iterative algorithms programmed in MATLAB 2014a, we developed PLS path model to estimate parameters for the public satisfaction evaluation model [3].

3. Satisfaction Evaluation Based on PLS Path Model

To identify key determinants of public satisfaction, we develop the satisfaction evaluation model shown in Table 1. The model conceptualizes public satisfaction ξ as comprising three latent variables: policy awareness, service process perception, and service outcome effectiveness [4]. For each latent variable, observed indicators were derived through field surveys. Subsequently, the composite satisfaction index was calculated by weighted aggregation of all observed variables' values x_{ij} within the specified measurement model [5,6].

Table 1. Public Satisfaction Evaluation Model

	Primary indicators	Secondary indicators
Public satisfaction ξ	Public policy awareness and information acquisition channels ξ_1	Public policy awareness x_{11}
		Information acquisition channels x_{12}
		Publicity and propaganda of the policy by the government x_{13}
	Service process ξ_2	Advance preparation: Simplified data and low repetition rate x_{21}
		In-process service 1: Convenience of window service x_{22}
		In-process service 2: The service guide is clear and easy to understand x_{23}
		In-process service 3: Service attitude and work efficiency of relevant staff x_{24}
		In-process service 4: Enjoy service diversity and flexibility x_{25}
		Post-event service: Follow-up service for unfinished matters x_{26}
	Service outcome effectiveness ξ_3	Reduced number of trips x_{31}
		Shortened time x_{32}
		More transparent and standardized service processes x_{33}
		The supervision ability of the public has been improved x_{34}

To address multicollinearity effects among the evaluation dimensions in the public evaluation model, we employed partial least squares (PLS) path model technology. This advanced analytical approach utilizes an iterative algorithm to estimate model parameters, ensuring more robust and interpretable results [7,8].

The PLS path model analysis was implemented using MATLAB R2014a, where the algorithmic procedure converged after 18 iterations. The final model solution, including all estimated parameters and associated statistical indicators [9-11], is shown in Table 2.

Table 2. Parameter Estimation Results of PLS Path Model

Latent variable	Observed variables	External weights	Correlation coefficient of latent variables		Observed variables	External weights	Correlation coefficient of latent variables
Policy awareness ξ_1	x_{11}	0.293	0.636		x_{11}	0.020	0.317
	x_{12}	0.325	0.698		x_{12}	0.031	0.727
	x_{13}	0.508	0.962		x_{13}	0.065	0.838
Service process ξ_2	x_{21}	0.315	0.665		x_{21}	0.031	0.715
	x_{22}	0.464	0.783		x_{22}	0.049	0.754
	x_{23}	0.512	0.912	Public satisfaction ξ	x_{23}	0.051	0.843
	x_{24}	0.506	0.905		x_{24}	0.059	0.922
	x_{25}	0.531	0.977		x_{25}	0.064	0.910
	x_{26}	0.528	0.968		x_{26}	0.060	0.896
Service outcome effectiveness ξ_3	x_{31}	0.514	0.927		x_{31}	0.069	0.908
	x_{32}	0.519	0.938		x_{32}	0.070	0.913
	x_{33}	0.409	0.752		x_{33}	0.042	0.693
	x_{34}	0.377	0.619		x_{34}	0.022	0.499

It can be seen from Table 2 that:

The main factor that affects the public policy awareness is whether the government's disclosure on various matters is timely and comprehensive.

The main factors that affect the service process perception are in-process service and follow-up afterwards.

The main factors that affect the service outcome effectiveness are the reduced number of trips

and shortened time.

The latent variable ξ, that is, the overall public satisfaction, has strong correlation with most observed variables except that the correlation coefficient with a few observed variables is low. That is, it is verified that ξ can better express the public satisfaction with this policy.

After the values of each latent variable are obtained by iterative calculation, the structural equation between the latent variables $\xi_i(i = 1,2,3)$ and ξ is obtained by using the partial least square method as follows:

$$\xi = 0.2205\xi_1 + 0.3025\xi_2 + 0.4179\xi_3 + \varsigma \quad (1)$$

Among them, $R^2 = 0.996$, it shows that the latent variables of policy awareness, service process and service outcome effectiveness in the evaluation model can explain the results of 99.6% satisfaction evaluation, which has a significant impact and a high degree of fitting of the model. From the path coefficient, it is the effect and process of service that have a greater impact on the public satisfaction, followed by the policy awareness.

4. Analysis of Differences in Policy Satisfaction among People of Different Ages and Educational Levels

4.1 Analysis of Differences in Policy Satisfaction among People of Different Ages

The satisfaction difference test of people of different ages is shown in Table 3:

Table 3. Satisfaction Difference Test of People of Different Ages

Chi-square test			
	Value	Degree of freedom	Asymptotic significance (2-tailed)
Pearson's chi-square	12.169a	4	.016
Likelihood ratio (L)	13.175	4	.010
Valid cases	501		
a. The expected count for 1 cell (10.0%) is less than 5. The minimum expected count is 2.09.			

Pearson X2=12.169, P=0.016<0.05 was obtained by X2 test on the policy recognition degree of different ages. It can be considered that the difference in policy recognition degree of different ages is statistically significant. People aged 36-60 have a high recognition degree, followed by people aged 18-25 and over 60, and people aged 26-35 have the lowest recognition degree.

4.2 Analysis of Differences in Policy Satisfaction among People with Different Educational Levels

The analysis of differences in policy satisfaction among people with different educational levels is shown in Table 4:

Table 4. Satisfaction Difference Test of People with Different Educational Levels

Chi-square test			
	Value	Degree of freedom	Asymptotic significance (2-tailed)
Pearson's chi-square	5.427a	3	.143
Likelihood ratio (L)	5.508	3	.138
Valid cases	501		
a. The expected count for 0 cell (0.0%) is less than 5. The minimum expected count is 11.09.			

Pearson X2=5.427, P=0.143>0.05 was obtained by X2 test on the policy recognition degree of people with different education levels. It can be considered that the difference in policy recognition degree of people with different education levels is not statistically significant.

5. Conclusion

At present, the reform faces three core problems: First, there are blind spots in the coverage of policy propaganda, and some people, especially women, the elderly and people with low education, have insufficient awareness of the policy connotation, so it is necessary to build a hierarchical propaganda system through accurate push of new media and offline case interpretation; second, the process optimization failed to meet expectations, and the fragmentation of window services and poor cross-departmental coordination led to the public "multiple trips". It is necessary to deepen the reform of "single window service", unify service standards, simplify flow charts, and promote the deep integration of online and offline; third, the service ability needs to be improved, and some personnel do not understand the policy thoroughly, and the service initiative is insufficient. It is necessary

to establish a normalized training mechanism, strengthen the systems of "first inquiry responsibility" and "one-time notification", link the service efficiency with the assessment, and force the responsibility to be implemented.

Solving the above problems requires systematic policies: on the one hand, guided by the needs of the public, establish a full chain mechanism of "accurate publicity beforehand, efficient service during the event, and follow-up service afterwards" to ensure that the reform dividend benefits the people; on the other hand, break through departmental barriers and achieve "seamless integration" through data sharing, process reengineering and collaboration of specialists. At the same time, it is necessary to balance the relationship of "streamlining administration and delegating power, improving regulation, and upgrading services". While relaxing examination and approval, it is necessary to strengthen in-process and post-event management through credit supervision and early warning prevention and control to ensure stable and far-reaching reform. To accelerate the "Run Once" reform, it is necessary to take multiple measures to improve the efficiency of government services. By strengthening publicity and guidance, deepening process reengineering, improving personnel quality, building inter-departmental collaboration mechanism and promoting data sharing, make every effort to open up the "first mile" and "last mile" of serving the public and create a new ecology of efficient and convenient government services. Only by facing the problem head-on and making precise policies can we promote the transformation of "Run Once" from promise to tangible convenience for the public, and help the modernization of government services to a new level.

References

[1] Ma J, et al. Analysis of the Implementation Effect of "Run Once" in Government Service Centers - Based on Satisfaction Survey. Public Management Research, 2023, 45 (04): 234-239.

[2] Haenlein M, Kaplan A. The Use of PLS Path Modeling in Marketing Research. European Journal of Marketing, 2019, 53(1-2): 1-22.

[3] Haenlein M, Kaplan A. The Use of PLS Path Modeling in Marketing Research. European Journal of Marketing, 2019, 53(1-2): 1-22.

[4] Zhao L, et al. Investigation Report on Tourist Satisfaction of APP Smart Tourism Experience in Scenic Spots. Trade Fair Economy, 2020, 31 (14): 112-116.

[5] Liu M, Chen H, Li J, et al. PLS Path Model Analysis for Supply Chain Performance Evaluation. Logistics and Supply Chain Management, 2022, 28 (06): 67-70.

[6] Hair JF Jr, Sarstedt M, Ringle CM. PLS-SEM: Indeed a Silver Bullet. Journal of Marketing Theory and Practice, 2011, 19(2): 139-152.

[7] Zhang Q, Wang L, Zhao W, et al. Research on Consumers' Online Shopping Behavior Based on PLS Path Model. Journal of Commercial Economics, 2023, 35 (07): 112-115.

[8] Zheng Q, et al. Research on Rolling Bearing Fault Prediction Based on PLS-ELM. Journal of Mechanical Engineering, 2020, 56 (08): 178-185.

[9] Zhou T, Wu J, Sun L, et al. Application of PLS Path Model in Scientific and Technological Innovation Capability Evaluation. Science & Technology and Economy, 2024, 31 (09): 135-138.

[10] Chen H, Bai Y. Evaluation of Tourists' Satisfaction in Coastal Tourist Attractions Based on Fuzzy Comprehensive Evaluation Method. Research and Application of Building Materials, 2021, 41 (02): 56-60.

[11] Li J, Zhang L. Research on the Influence of the Reform of "Run Once" in Government Affairs on Public Satisfaction. Administration Reform, 2022, 40 (02): 45-50.