

## ADMINISTRATIVE BURDEN AND BUSINESS SATISFACTION WITH PUBLIC SERVICES\*

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### Abstract

This study explores the relationship between businesses' perceived administrative burdens and their satisfaction with public services, addressing a notable gap in existing literature that primarily emphasizes individual perspectives. A mixed-method approach was utilized. Initial qualitative interviews identified perceived administrative burdens in businesses using a comprehensive framework that includes learning costs, compliance costs, and psychological costs. This was followed by a quantitative analysis to evaluate the impact of these burdens on business satisfaction with public services and to validate the interrelationships among the different types of costs. The results demonstrate that all three types of administrative costs negatively impact business satisfaction. Significantly, compliance costs serve as a mediating factor, influencing satisfaction both directly and indirectly through learning and psychological costs. This study provides practical insights for improving public service delivery by mitigating administrative burdens on businesses. These enhancements can foster a more favorable environment for business-state interactions and elevate overall satisfaction with public services.

**Keywords:** administrative burden, public service, business, mixed-method, satisfaction.

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## 1. Introduction

Public service encounters, particularly in business-public official interactions, are a critical aspect of the relationship between state administration and businesses. However, there is limited knowledge regarding their underlying dynamics and resulting implications. The government plays a vital role in business operations by manipulating various factors such as access to the market, labor markets, and investment supply (Obaji and Olugu, 2014). Specifically, the government provides entry services for which businesses can apply and sets conditions that businesses must meet to obtain financial support (Arendsen *et al.*, 2014; Virglerová, Dobeš and Vojtovič, 2016). Provisions related to these public services usually require businesses to exert effort before or during the process. These tasks can be welcome or unpleasant, easy or complicated, all of which generate administrative burdens and influence businesses' perceptions of public services (Burden *et al.*, 2012).

Despite a growing body of research on the administrative burden in public administration, evidence from businesses remains relatively sparse (Virglerová, Dobeš and Vojtovič, 2016). It is well recognized that both individuals and businesses are critical public service recipients. Understanding where such burdens arise and how they influence businesses' perceptions of public services is vital for studies on public administration.

Most available research from the citizen's perspective discusses administrative burden through a model comprising three types of costs: learning, compliance, and psychological costs (Moynihan, Herd and Harvey, 2015). However, research into businesses' perceived administrative burdens primarily focuses on compliance costs (Ntaliani and Costopoulou, 2018; Carter, Scott and Mahallati, 2018). This study broadens the scope of previous studies by also investigating the roles of learning and psychological costs to obtain a more comprehensive understanding of the composition of administrative burden.

The second goal of this study is to examine the relationships among these costs in the context of developing countries. While it is generally accepted that there are likely relationships among these three types of costs, there is insufficient empirical support. Therefore, this study aims to first evaluate whether the framework involving three types of costs is applicable in a business context and, if so, how these costs impact businesses' satisfaction with public services.

The findings presented herein offer not only a more comprehensive understanding of the administrative burden experienced by businesses but also valuable insights for enhancing business-government interactions. By clarifying the causes and mechanisms underlying businesses' burdens, this research can help bridge information asymmetries between government and enterprises, ultimately contributing to improved government credibility and more effective public services. Additionally, since there is a limited literature set in developing countries, it is noteworthy to investigate this in a different national context.

Considering the current research landscape, the administrative burden framework comprising three types of costs has been widely recognized in the context of individuals (Moynihan, Herd and Harvey, 2015). However, the model's applicability remains

relatively unclear in a business context (Heinrich and Brill, 2015). Therefore, the present study employs a mixed-method approach. A qualitative confirmatory case study was conducted to test the validity of the administrative burden framework in a business context and identify the factors treated as burdens by businesses in face-to-face encounters. Based on the qualitative findings, quantitative data were analyzed to further explore how the three types of costs interact and impact businesses' satisfaction with public services. By confirming the existence of the three types of costs in the business context before moving on to quantitative testing, the mixed-method approach provided a more comprehensive and rigorous pathway relative to a single-test approach. Empirical data were obtained from surveying a broad array of businesses, which have direct perceptions of administrative burden and are eager to comment on measures to improve government public service satisfaction.

The remainder of the research is structured as follows. First, we review the relevant research to provide a background on administrative burden. Then, we discuss the identified elements seen as burdens from the perspective of businesses by reporting our interview data. After presenting the quantitative findings, we discuss the contributions and limitations of this work, as well as suggestions for future studies.

## **2. Literature review and theoretical background**

### ***2.1. Administrative burden: A framework comprising three types of costs***

Administrative burden stems from a stressful interaction between service users and service providers, an example being public servants (Burden *et al.*, 2012). It differs from the concept of red tape, which historically focuses on bureaucratic procedures, while administrative burden pertains to citizens and businesses (Burden *et al.*, 2012). Burdens may occur from intricate access to services, bureaucratic demands, and the discretion of front-line workers (Moynihan, Herd and Harvey, 2015; Heinrich, 2018). These burdens can impact participation in social programs, e.g., Temporary Assistance for Needy Families (TANF) and Medicaid (Heinrich, 2016), and shape public perception of government (Herd and Moynihan, 2018).

In refining the definition of administrative burden, Moynihan and Herd (2014) suggest three types: learning costs, compliance costs, and psychological costs. These costs occur during different stages of engaging with a program or service, from learning about it to undergoing the actual application process (Herd and Moynihan, 2018). This three-dimensional framework allows a comprehensive view to reduce negative impacts. However, studies on administrative burdens as experienced by businesses remain limited (Moynihan, Herd and Harvey, 2015).

Business perceived burden was previously discussed in a stream of literature called regulatory burden (Herd and Moynihan, 2018). However, it is necessary to analyze the business context from a different perspective, the administrative burden, for several

reasons. Firstly, regulation reduction is not equal to administrative burden elimination. Obviously, administrative burden arises from broader interactions between business and the government, not only while businesses are being regulated. For some interactions, the administrative burdens are high, and for some interactions they are low. This leads to the second aspect, compared to studying burden from a single regulatory burden perspective, it is more comprehensive to explore from an analytical view of three costs to understand why administrative burdens occur and how different costs formulate total burdens. Lastly, administrative burdens mediate how citizens perceive the government as a positive or negative force. Similarly, it formulates businesses' perceptions of the government. Instead of primarily focusing on the public, businesses should be considered with equal importance since businesses represent important stakeholders (Ntaliani and Costopoulou, 2018).

## ***2.2. How administrative burdens affect business perceptions***

In order to identify specific communicative practices related to administrative burdens, we conducted an exploratory interview-based study involving business representatives. The data used in this study are based on a Chinese capital city located in the Northeast region of the country. The purpose of a qualitative component is to understand what factors are considered burdens from the perspective of businesses. The qualitative study was conducted from April to June 2021. We conducted 35 interviews with local companies that had direct experience interacting with public servants. The interviewees included 24 office staff (10 from finance departments, 5 from accounting, 7 from human resources, and 2 holding dual roles in finance and HR) and 11 management-level representatives (7 legal representatives, 1 shareholder, and 3 managers). All participants were assured of anonymity prior to the interviews. The selection criteria focused on ensuring that respondents had direct responsibility for liaising with government agencies on behalf of their companies. Additional firm-level data—including business type, operational tenure, and size—were collected to contextualize the sample (see Table 1). The qualitative study was conducted via semi-structured interviews, including the following open-ended questions:

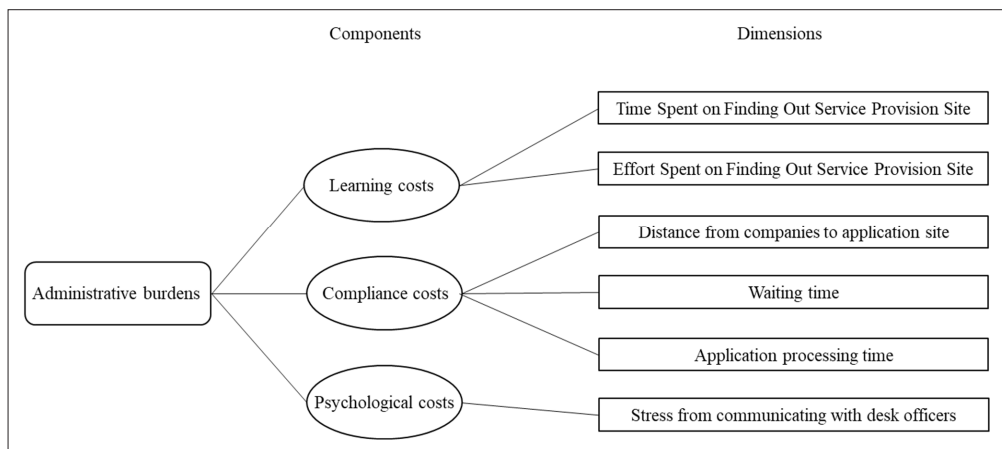
- As a business representative, what aspects influence your perceived satisfaction with the public service provided?
- Which is the most influential aspect among those mentioned?

All interviews were recorded and transcribed. Two researchers separately compared and verified the narratives from informants. As a result, we were able to successfully classify the observed factors into six dimensions, two of which were related to learning costs, three dimensions to compliance costs, and one to psychological costs. Subsequently, we provide a detailed account of each of the dimensions of the burdens, incorporating illustrative quotes from the interview participants.

**Table 1:** Characteristics of the interviewed companies and representatives

Characters of interviewed company and representative	No. of companies
<b>Business type</b>	
private-owned company	33
state-owned company	2
<b>Business in operation</b>	
less than 1 year	8
1–3 years	9
3–5 years	5
5-10 years	3
equal to or more than 10 years	10
<b>Business size (employees)</b>	
less than 10	16
10 to 99	12
100 to 299	4
300 or more	3
<b>Position of respondent</b>	
office staff (including staff from financial staff, accounting, and human resource departments)	24
management level (including legal representative, shareholder, and manager)	11
<b>Total</b>	<b>35</b>

Source: Compiled by the authors



**Figure 1:** A taxonomy of administrative burden

Source: Figure adapted from Moynihan, Herd and Harvey (2015)

### **2.2.1. Time and effort spent on finding the service provision site —burden of learning costs**

The comments on this subject reflect a sense of frustration with the fact that a lack of proper notification of the service scope results in extra time and effort from the representatives to search for the correct service provision site. The representatives of companies 28 and 18 complained that *‘Coming to the administrative licensing center is an unavoidable step before an application process is initiated. Just like this morning, I walked towards the counter and consulted about the service I planned to apply for. The workers sitting inside told me it was not within their scope. If they could advertise the scope of services via WeChat or other channels, I would not come here and take such a long time waiting in a long queue.’* [Company 28]. Also, *‘It would be very helpful if we could easily know where to go for our desired service. I had already been to the city-level administrative licensing center, but annoyingly, the front-line worker told me that was the wrong place – I should go to the district-level administrative licensing center.’* [Company 18]. All these aspects indicate the subjective feelings of learning how to access services—one major form of learning costs (Moynihan, Herd and Harvey, 2015).

### **2.2.2. Time and effort spent on the application process —burden of compliance costs**

The views of most business representatives who commented on the paperwork referred to the distance and time away from their companies reaching the application site, the waiting time, and the application processing time. The representative of company 20 was not satisfied with the multiple trips caused by the rigid process. *‘If we forgot files or documents, we had to go back to the office, grab them, and then come back to this site. And after the application is approved days later, we will have to come back again to pick up the approval.’* [Company 20]. Similarly, the representative of company 2 complained about the waiting time *‘Yesterday, I waited the whole afternoon and was still not my turn. The workers started to work at 13:30 and ended up at four o’clock. 2.5 hours of working time is only enough for a few cases. For us, we will have to come back tomorrow, and no tasks have been done today.’* [Company 2]. There are also many representatives who complained about the time spent on complicated documentation. *‘We need to prepare so many complicated documents on our own. However, there is no unified template available, so we may spend a lot of time just ending by making many unimagined faults.’* [Company 29]. All these feelings arise from the strict time constraints associated with administrative requirements during the application process, which represent a major aspect of compliance costs (Moynihan, Herd and Harvey, 2015).

### **2.2.3. Stressful communication with officers —burden of psychological costs**

In most cases, interviewees felt they were begging for the service because of the officers’ bad attitudes and behaviors. Moreover, the representative of company 19 even felt stressed

while communicating: *‘Sometimes, I don’t dare to talk with workers. I have encountered a worker with a very bad attitude before. So, I really do not dare to go to the administrative licensing center.’* [Company 19]. It is notable that the negative aspect that the business representatives mentioned is stress rather than stigma, which might be one potential difference between the business and the individual welfare claimants. Overall, all these interview responses indicated that there is a potential relationship between stress and psychological costs.

#### **2.2.4. Most influential cost burden**

The answers to the question ‘What burden affects you the most?’ varied widely. Interestingly, the support for compliance costs was the strongest. The representative of company 1 said *‘From the perspective of our company, I think the most important thing is to improve the handling process. The simpler, the better. Other things, such as advertisement and attitude, are not such critical aspects because the purpose of business applicants is to get things done. In fact, if the application can be approved smoothly and quickly, others are no problems. But if the application cannot be well processed, no matter how well the advertisements and attitudes, they are far away from our core needs. Definitely, the best is to improve all three of them. But if only one aspect can be enhanced, I will say approve the application.’* [Company 1]. This finding deserves in-depth research in later quantitative studies since previous literature has not discussed the relative importance of the three types of costs.

These interviewee records illustrate a real sense of the businesses. This is not to say that every firm perceives high levels of burden; however, the sentiment is extensive enough to merit further investigation. Analysis of the interview data provided interesting insights. First, the results found concrete factors that are treated as burdens by businesses. These findings were reliable even across various enterprise scales, maturities, and types. The results from businesses are consistent with existing administrative burden literature focusing on individuals. Second, while existing literature generally concludes that compliance costs are the most onerous burden among the three (Carter, Scott and Mahallati, 2018), our findings paint a more nuanced picture of the interplay between different costs. For instance, Company 18 reported that unclear information (high learning costs) necessitated frequent trips to the service center (high compliance costs), prolonging the processing time. Similarly, Company 19 mentioned that the poor attitude of staff (high psychological costs) made customers afraid and reluctant to visit the service hall, which increased the extra time and effort needed to obtain service (high compliance costs). These cases vividly illustrate how learning costs and psychological costs can influence compliance costs, thereby impacting business satisfaction. Additionally, some firms claimed that compliance costs were the most burdensome, whereas others argued that learning costs created the greatest burden; some indicated that all three types of costs need to be eliminated simultaneously. As these insights emerged, the objective of this exploratory study evolved from merely examining the potential relationships among the three types of costs, to uncovering the mechanism governing how administrative burdens holistically impact public service satisfaction.



### 3. Research model development and hypotheses

The objective of this study is to examine the impact of administrative burdens on business perceptions. However, to date, there is a lack of strong and systematic empirical evidence supporting this beyond the statements derived from interviews mentioned earlier. To assess the relevance of the proposed components and dimensions of administrative burdens to business perceptions, we conducted a structural equation modeling. Here, we hypothesize about the relationships between the three types of administrative burden costs and their associated impacts on businesses' perceived public service satisfaction. The hypotheses are based on the relevant literature, as well as the findings from our qualitative study.

#### *3.1. Three types of cost burden reduction and positive public service satisfaction*

The relationships among the three types of costs identified in the qualitative portion of the mixed-methods design were examined. It should be noted that these costs have been defined and empirically investigated through case studies in previous research, primarily in the context of individuals' perceived administrative burdens rather than businesses. Based on our qualitative study, we recontextualized the three types of costs within the business environment. These variables are regarded as aspects of administrative burden, as the qualitative study utilized language aligning with their conceptual definitions. Below, we discuss these three types of costs and their interrelationships in detail.

**Learning costs.** In our research context, when businesses intend to apply for certain public services, they must learn about the services, including application requirements, procedures, and associated benefits (Moynihan, Herd and Harvey, 2015). Governments can reduce learning costs by improving information accessibility and accuracy through various actions (Herd and Moynihan, 2018). For instance, relevant information can be disseminated through messaging, outreach efforts, and basic communication using Information Technology (Wuppermann, Bauhoff and Grabka, 2014). Empirical research has confirmed that media campaigns for Medicaid positively impacted take-up rates (Kincheloe, Frates and Brown, 2007).

The impact of learning costs can be inferred from the obstacles set for eligible applicants regarding their awareness of public services, necessary qualifications, and associated benefits (Afendulis, Sinaiko and Frank, 2015). When applicants face high learning costs, they tend to have more negative experiences. The qualitative results revealed that most interviewees had higher expectations regarding advertisements of the service scope. Based on the literature and qualitative findings, we posit:

*H1: Reduction in learning costs is positively associated with businesses' perceived satisfaction with public services.*

**Psychological costs.** This genre of costs has been studied extensively in terms of individuals' perceived administrative burdens. Such costs can be categorized as: (i) a sense of lost autonomy or power, inducing stress during the application process, or (ii) stigma



associated with applying for an unpopular program (Moynihan, Herd and Harvey, 2015). Unlike welfare claimants, business actors do not face these stigma-inducing elements (Baekgaard, Moynihan and Thomsen, 2021). Therefore, this research focused on the first type of psychological costs.

The sense of autonomy can be eroded due to degrading and intrusive interactions with front-line workers. In our study, all the business representatives interviewed noted significant improvements in the attitudes of public servants compared to previous years. Patience, approachability, and responsibility of the workers were commonly highlighted in their comments. Based on these results, we posit:

*H2: Reduction in psychological costs is positively associated with businesses' perceived satisfaction with public services.*

**Compliance costs.** Compliance costs pertain to the burdens associated with adhering to application requirements and rules (Moynihan, Herd and Harvey, 2015). For instance, businesses applying for services often complain about the time and monetary investments required to complete forms, provide specific documents, and wait in queues. Among all evaluated aspects of burden costs, compliance costs have received the most empirical attention. Experimental investigations have examined the relationship between documentation requirements and participation, revealing that simply adding an income certification led to a substantial reduction in participation (Brien and Swann, 1997).

The consequences of high compliance costs were widely demonstrated by the business representatives surveyed in this study. They reported issues such as the long distances to administrative licensing centers, extended waiting times, and the need to make multiple trips due to missing documentation. Based on these observations, we posit:

*H3: Reduction in compliance costs is positively associated with businesses' perceived satisfaction with public services.*

**Relationships among the three types of costs.** Learning costs, compliance costs, and psychological costs are often discussed in pairs in the existing literature, with compliance costs being the most widely mentioned. When government processes are complex, businesses need to invest more time and resources to understand these requirements, thereby increasing learning costs (Ntaliani and Costopoulou, 2018). To comply with these requirements, businesses may need to make additional adjustments, incurring extra effort and costs, known as compliance costs (Moynihan, Herd and Harvey, 2015).

Given this, we hypothesize that compliance costs mediate the relationship between learning costs and business satisfaction with government services. High compliance costs can make it more challenging for companies to adhere to government regulations, thereby increasing their overall burden and reducing satisfaction with public services. Thus, we hypothesize that:

*H4a: Compliance costs mediate the effects of learning costs on businesses' perceived satisfaction with public services.*

Compliance and psychological costs are often associated with each other (Bartlett, Burstein and Hamilton, 2004). The increase in psychological costs is linked to negative emotions and distress, such as frustration, stress, and anxiety. These emotions influence businesses' attitudes and behaviors toward government requirements (Coulacoglou and Saklofske, 2017). Psychological resistance can manifest as emotional and behavioral opposition to complying with government demands, leading to resistance among businesses. Businesses may develop an aversion to government requirements, perceiving them as increasing burdens and uncertainties. To alleviate psychological costs, they may attempt to avoid cumbersome regulations and procedures or seek alternative approaches to minimize compliance costs. This resistance and difficulty in compliance can impede businesses from fully adhering to government requirements, resulting in higher compliance costs and greater inconveniences when utilizing government services, ultimately diminishing business satisfaction.

The importance of compliance costs was repeatedly mentioned in the interviews. More than two-thirds of the company representatives stated that compliance costs were the most relevant burdens to their satisfaction with public services. Some explained that accomplishing tasks quickly and easily was their top priority, whereas searching in the learning stage and the attitudes of workers were not as critical. Based on these arguments, we posit:

*H4b: Compliance costs mediate the effects of psychological costs on businesses' perceived satisfaction with public services.*

According to the hypotheses and conceptual model described above, we applied our research model to investigate administrative burden (Figure 2), and developed a corresponding quantitative (empirical) study as part of the mixed-methods design.

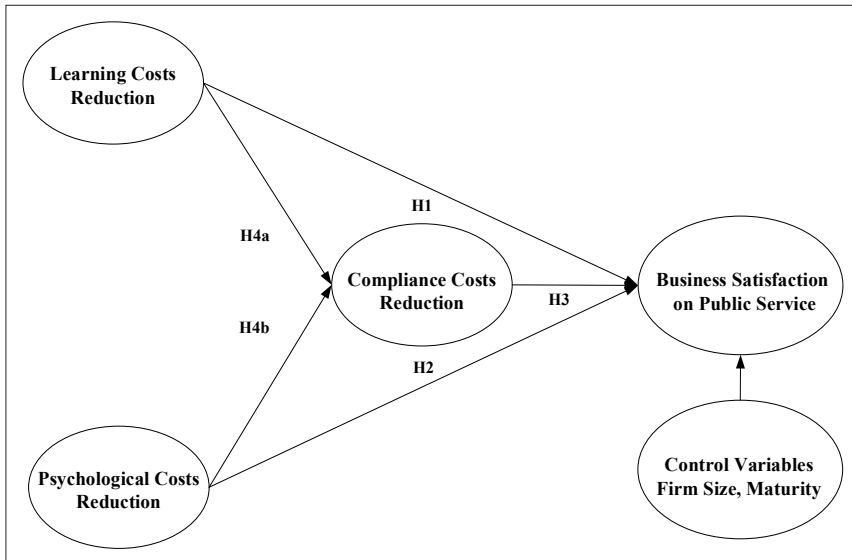


Figure 2: Conceptual model of quantitative study

Source: Compiled by the authors

### 3.2. Sampling and method

The quantitative study aims to examine how three types of burdens influence public service satisfaction perceived by businesses. To test our model, a survey was conducted in Harbin, a provincial capital in China, where the business landscape closely mirrors the national average, particularly in terms of the predominance of private-owned businesses. Given this, the findings may offer valuable insights for other cities in China with similar business landscapes.

### 3.3. Data collection

The survey was conducted by a commercial organization specialized in business perceptions of public services. The organization has sufficient experienced staff to conduct large-scale surveys for governments and research institutes. Harbin contains 18 districts with different development degrees and a number of businesses. To obtain a diverse sample, we applied a stratified random sampling method and used the city district as the stratifying variable. The objects were selected from all 18 districts, and each district of Harbin was represented in its realistic proportion. From October to December 2020, a total of 216 companies completed the questionnaire; 32 of these responses were removed because of missing values, which left 184 usable responses that were analyzed. This size is small in individual-level research; however, one sample represents one company in our case. A sample size of around 200 is acceptable in organizational-level research (Krause and Van Thiel, 2019). Approximately 90% of the participants were privately owned businesses, which is consistent with the real situation of the city (OECD, 2002). The median number of operating years (an index of the business maturity) was between three and five years. Table 2 shows the firm characteristics and other details of the sample.

Table 2: Descriptive statistics

		Frequency	Percent
Type	State-owned company	12	7.0
	Private-owned company	170	92.0
	Foreign company	2	1.0
Size	Less than 10 (people)	69	38.0
	10–100 (people)	88	48.0
	100–300 (people)	16	9.0
	More than 300 (people)	11	6.0
Maturity	Less than 1 (year)	16	9.0
	1–3 (years)	43	23.0
	3–5 (years)	23	13.0
	5–10 (years)	37	20.0
	Longer than 10 (years)	65	35.0
Total		184	100.0

Source: Compiled by the authors

### 3.4. Measures

To our knowledge, there are limited developed scales available to measure businesses' perceived administrative burdens. The diagnostic questions of the administrative burden from the literature and the exploratory data from the interviews constituted the measurement items. Each construct consisted of three items, and items were rated on a five-point Likert scale, from 1 = totally disagree to 5 = totally agree.

Moynihan, Herd and Harvey (2015) determined that learning costs reflect the difficulty of collecting information. More specifically, Heinrich (2016) argued that participants perceive high learning costs when they have problems with finding where to apply for a given policy. After years of research, the diagnostic question to probe the learning costs was refined as: 'Is it easy for potential participants to find out about the program?' (Herd and Moynihan, 2018). Based on this research and adapted to our research context, we asked companies to rate three statements related to the ease of finding information in three notification channels: the administrative licensing center, the government home page, and popular mobile applications. High scores in response indicate a clear perceived reduction in learning costs.

Diagnostic questions related to compliance costs include 'How much documentation is needed?', 'How much time must people commit to the process?', and 'What are the financial costs?' (Herd and Moynihan, 2018). Consistent with these questions, many studies have shown that complex document requirements are a definite barrier for applicants (Zembe-Mkabile *et al.*, 2012). Mirugi-Mukundi (2009) confirms that long queues and waiting times are also frustrating barriers for applicants. Empirical evidence presented by Heinrich and Brill (2015) indicated that high fees prevent eligible participants from applying. Thus, measuring the compliance costs in our research context was made by asking respondents to rate the following three factors: the ease of understanding and preparing the required documentation, the convenience of navigating different working stations, and the time and financial costs involved in the process.

Measurements of the psychological costs were enabled by adjusting the definition based on business-specific characteristics. For example, psychological costs can be evaluated through questions, such as 'Are interactions stressful?', 'Do people receive respectful treatment?', and 'Do people enjoy some autonomy in the interaction?' (Herd and Moynihan, 2018). In contrast to citizens' perceived psychological costs, we aimed to minimize the feelings coming from personal factors, such as the participants' backgrounds or knowledge levels. Because employee turnover is a common challenge when running a business, this research focuses on psychological change originating from the objective service provided by the public servant and their behavior. Thus, psychological costs are measured by agreement with the following statements: service providers are prompt and do not procrastinate; they take responsibility and do not make excuses (e.g., 'do not know, not sure'); they display a positive attitude and proper behavior. Similar to the other two costs, high scores in responses indicate a clear reduction in psychological costs.

The measurements of public service satisfaction had three questions selected from Wong, Liu and Cheng (2011) study: to what degree participants agree that (1) ‘applying for service from local government is convenient’, (2) ‘the efficiency of applying for service from local government is high’, and (3) ‘the attitude of front-line workers in local government is positive’. High scores in response to these prompts indicate that the businesses are satisfied with the public services received.

Importantly, we controlled for the firm size and maturity to test the developed model. The response scale categories for the firm size were 1 (< 10 people), 2 (10–100 people), 3 (100–300 people), and 4 (> 300 people). Similarly, the scale for firm maturity was 1 (< 1 year), 2 (1–3 years), 3 (3–5 years), 4 (5–10 years), and 5 (> 10 years). In each case, the companies were asked to choose from a given range according to their real status.

## **4. Results**

Partial least squares (PLS) structural equation modeling (SEM) was employed to evaluate the survey data. In line with prior applications of PLS, a two-step analytical method was used to test our model (Gefen and Straub, 2005). The first stage involved assessing the reliability and validity of the model, and the second stage involved structural model testing (Hulland, 1999).

### **4.1. Measurement model**

Using previous research as a guide, we carefully reviewed the validities to ensure the quality of the inferences and conclusions acquired from our quantitative study (Venkatesh, Brown and Sullivan, 2016). Convergent validity and reliability (Table 3) were satisfied by meeting several criteria (Gefen and Straub, 2005). First, the loadings of each item were > 0.7, which is above the cut-off value of 0.5. Moreover, this value is significantly higher than in the case of other constructs. Second, both the average variance extracted (AVE) and composite reliabilities (CR) of all constructs were ~0.9, which exceeded the recommended 0.7 level. Third, we examined the discriminant validity via two methods. One followed the Fornell-Larcker standard, i.e., AVE of each construct was higher than its squared correlations with other constructs (Fornell and Larcker, 1981). The other rule was heterotrait-monotrait (HTMT), which estimates the construct correlations (Henseler, Ringle and Sarstedt, 2015). Both tests were passed, thus demonstrating qualified discriminant validity. Therefore, overall, our measurements are reliable and accurate.

Finally, the model was tested using Harman’s single-factor test, and the results indicated that the eigenvalue of each factor was greater than one, meaning that common method variance was not a problem for the model (Podsakoff *et al.*, 2003).

**Table 3:** Results of model estimation

	Alpha	CR	AVE	Firm Size	Firm maturity	LC	PC	CC	Satisfaction
Firm Size	-	-	-	-	-	-	-	-	-
Firm maturity	-	-	-	.392	-	-	-	-	-
LC	.883	.928	.812	.134	-.078	(.901)	-	-	-
PC	.844	.906	.762	-.006	-.131	.631	(.873)	-	-
CC	.813	.884	.718	-.072	-.121	.517	.544	(.847)	-
Satisfaction	.934	.958	.884	.048	-.070	.804	.752	.680	(.940)

**Notes:** Alpha = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted; LC = learning costs; PC = psychological costs; CC = compliance costs; Satisfaction = business satisfaction with public service.

Source: Compiled by the authors

#### 4.2. Structural model

We evaluated hypothesized relationships while controlling for the firm size and maturity. The results indicated that all hypotheses were supported. Hypothesis 1 assumes that reduced learning costs have a direct effect on business satisfaction with public service. The direct relationship between learning cost reduction and business satisfaction was positive ( $\beta = 0.464$ ) and statistically significant at  $p < 0.001$ . Thus, the results support hypothesis 1; reduction of learning costs is positively related to business satisfaction.

Hypothesis 2 predicts that psychological cost reduction impacts business satisfaction directly and positively. This means that as the psychological costs continue to be reduced further, business satisfaction with the public service will increase. The results of the PLS path model show that the relationship between psychological cost reduction and business satisfaction is positive ( $\beta = 0.317$ ) and statistically significant at  $p < 0.001$ . Thus, hypothesis 2 is supported by the findings of this study.

Hypothesis 3 postulates that compliance cost reduction has a direct, positive effect on business satisfaction with public service. The results show that there is a positive relationship between compliance cost reduction and business satisfaction ( $\beta = 0.271$ ), and it is statistically significant at  $p < 0.01$ . Hypothesis 3 is therefore also supported by the findings of this study. The reduction of any one of the three evaluated costs positively impacts businesses' satisfaction with public services.

In addition, Hypotheses 4a and 4b predicted that learning and psychological cost reductions together have an indirect, positive effect on business satisfaction with public service through their influence on compliance costs. We tested this mediation effect by bootstrapping with 5,000 subsamples to ensure a higher accuracy (Byrne, 2013). The mediation effect of compliance costs was significant, which confirmed its unique importance among the three costs, as proposed. The detailed results from structural model testing are presented in Figure 3.

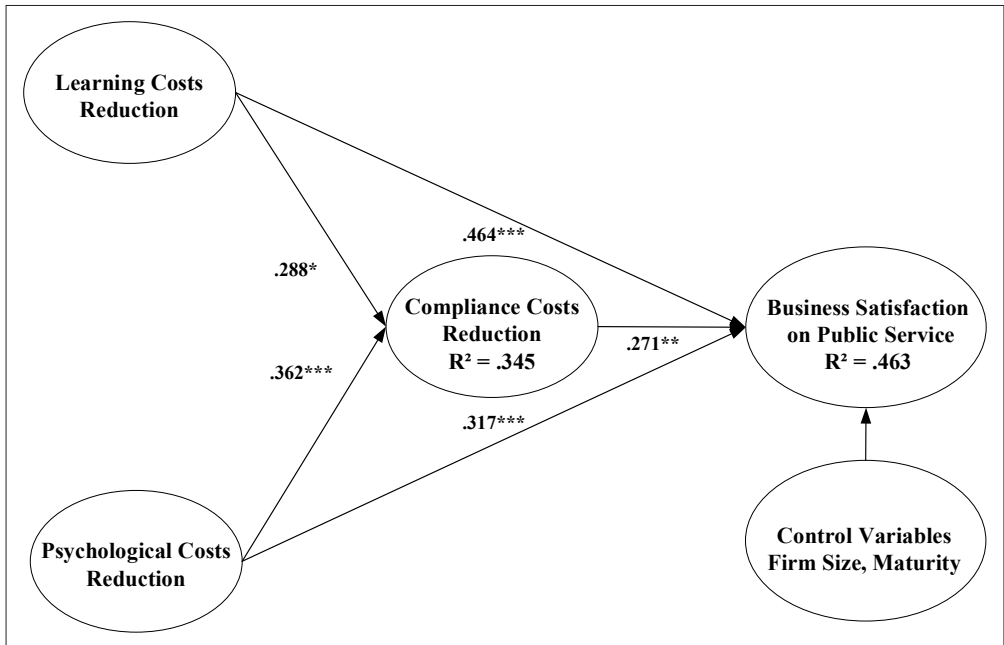


Figure 3: Structural model of quantitative study

Source: Compiled by the authors

## 5. Discussion and conclusions

Administrative burden is a vital concept in the field of public administration. The results of this study indicate that the administrative burden not only affects the public but also impacts businesses. This study examined the three-costs framework in a business context and identified the elements that businesses consider burdensome.

The general framework suggests that the perceived learning, compliance, and psychological costs negatively impact businesses' satisfaction with public service. The effect of learning costs implies that businesses value information regarding where and how to apply. The interviewed business representatives (company 18) indicated that the information published on official government websites is not detailed. Most applicants still must go to the administrative licensing center or call the associated hotline to ask for the information. This practice was deemed ineffective by the business representatives because time for a business is as valuable as money. Thus, publishing useful information through broader channels will increase businesses' satisfaction with the services.

Consistent with previous findings regarding individuals' perceived administrative burdens, psychological costs represent an important burden for businesses. This consistency is reasonable because the representatives are people assigned by companies to deal with public service, and therefore, they naturally also have feelings of stress. One interesting observation is that the psychological cost in the business context does not incorporate stigma.



This reflects the difference between business and welfare claimants: businesses avoid the stigma and identity threats that welfare claimants face, leading to lower psychological costs for businesses (Baekgaard, Moynihan and Thomsen, 2021).

Compliance costs can directly be triggered by factors such as long travel distances to the application site, waiting times, and application processing times. Our study also demonstrated the mediating role of compliance costs. As Company 19 stated, *‘Sometimes I don’t dare to talk with workers. I have encountered a worker with a very bad attitude before. So, I really do not dare to go to the government affairs hall.’* High psychological costs can fuel businesses’ ‘avoidance’ mentality, exacerbating compliance costs. On the other hand, the case of Company 29 illustrates how learning costs can lead to compliance costs. Due to incomplete application instructions, businesses may prepare insufficient materials, and on-site supplementation can be troublesome. The ‘aftershocks’ of learning costs further increase the compliance costs. To our knowledge, previous literature has treated these three types of costs as equally important. However, this study found that compliance costs are the most significant burden for businesses compared to the other two costs. This may be due to the research context in China, where business registration reforms have been ongoing since the 1980s, aiming to improve service quality by primarily reducing time and procedural burdens (Zhu and Zhang, 2016). For instance, local governments have introduced ‘one-stop services’ to accelerate the registration process. Therefore, our findings align with Chinese policies and highlight the critical burden faced by Chinese businesses.

Some research suggests that firm size affects satisfaction levels, with large companies typically facing more burdens due to complex services (e.g., alterations of investors’ equities) (Dabla-Norris, Gradstein and Inchauste, 2008). However, our findings differ. While large companies may encounter high costs, they benefit from internal resources and cross-district branches, which reduce perceived learning costs through internal experience sharing. In contrast, small companies lack such resources, making high learning costs more impactful. Therefore, despite higher costs, large companies manage them more efficiently due to their internal knowledge base.

### ***5.1. Theoretical implications***

Our research contributes to the public administration literature in several ways. First, it broadens the understanding of the administrative burden by complementing existing research. The results from a large sample of businesses validated our proposed research model.

Second, by using the three-cost framework (compliance, learning, and psychological costs), we provide a comprehensive understanding of the factors impacting business satisfaction. Previous research often focused solely on compliance costs, neglecting learning and psychological costs, thus limiting the potential for public service optimization.

Finally, our findings reveal the relationships among the three types of costs. While previous studies examined these costs separately, our research highlights the significant mediating role of compliance costs. This indicates distinct business priorities that can be considered to optimize public services.

## ***5.2. Practical implications***

This research has significant implications for the design and delivery of government services. Identifying three types of costs – compliance, learning, and psychological – confirms the efficacy of current efforts to optimize public services. For example, adequate advertising of service scope can reduce learning costs. Minimizing time and fees can reduce compliance costs, and encouraging patient and responsible communication from public servants can mitigate psychological costs. Setting standards or optimizing administrative processes based on these strategies has been shown to be effective. Our findings also suggest that a multi-faceted approach considering the interplay among the three types of costs is crucial for precise and efficient public service provision. While efforts to reduce compliance costs have the most significant impact on enhancing business satisfaction when considered in isolation, policymakers should not overlook the role of learning and psychological costs. High learning costs arising from inadequate information channels or unclear guidelines can lead to insufficient preparation of application materials, necessitating multiple trips to supplement documents and thereby increasing compliance costs. Similarly, high psychological costs, such as the reluctance to engage with government departments when faced with unhelpful public servants, may cause businesses to spend more time exploring on their own rather than seeking consultation, resulting in inefficiencies and persistently high compliance costs. Policymakers should apply a holistic view, recognizing that addressing one type of cost in isolation may have unintended consequences on the others. Integrated strategies that simultaneously tackle learning, psychological, and compliance costs are more likely to yield the greatest improvements in business satisfaction with public services.

Reducing administrative burdens is essential for optimizing the business environment, regardless of firm size. A thorough understanding of the root causes of these burdens and the improvement of government-business relations can be achieved by adopting an enterprise-centered perspective and aligning policies with their specific needs.

## ***5.3. Limitations and future research***

Like any study, this research is not without limitations. This work was conducted in one city, and therefore, the results may not be applicable to all cities. Further research could extrapolate the model by testing in more cities to evaluate the consistency of the findings and to more comprehensively understand the administrative burden.

Another goal for future research would be to determine the balancing point when shifting the administrative burden from businesses to public servants. Existing research has shown that over-shifting the administrative burden could negatively impact public servants' working attitudes and turnover rates in the long run. For example, a high degree of added administrative burden originating from an election process shifted key responsibilities to others (Burden *et al.*, 2012).

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**Appendix:** Coding process and examples

Second-order constructs	First-order constructs	Examples
Learning costs	Advertising of service scope through the website	'We will post inquires on the Internet; then, the Internet will show the instructions directly, or some netizens will comment on them.' (Company 13)
	Advertising of service scope through social media	'If a WeChat QR code can be provided, I will know what material to submit as soon as I scan it. And it would be better if it could also tell me the location immediately.' (Company 1)
	Advertising of service scope through administrative licensing center	'In some cases, when we go to the administrative licensing center for preliminary consultation, the officers will inform us that we can either come to the hall or handle it online by ourselves when later initiating the application process.' (Company 13)
Compliance costs	Documentation requirements	'Templates provided in the hall are very detailed. We just need to modify a very small part of the form.' (Company 30)
	Distance between company and application sites	'I have to go to Town Hall for our company's project tomorrow. It is too far from here – why can't we proceed with all services in our company located district?' (Company 12)
	Moving times for applying for one service	'It has been improved a lot because the officer will tell me everything, that is, which part of the documentation is wrong and how to fix it. Unlike years ago, we could only guess where it was wrong, which turned out that we would only be able to prepare the right documentation after three or four times corrections. Now this issue has indeed changed a lot, and it's pretty good.' (Company 29)
	Waiting time for applying for one service	'The worst experience was that I came here in the morning but waited until afternoon to get the chance to talk to the desk officer.' (Company 10)
	Processing time for applying for one service	'More desks are open with adequate officers to help us. The processing speed is much faster than before.' (Company 25)
	Waiting area is comfortable or not	'The government affairs hall is too hot – just as an oven!' (Company 8)
Psychological costs	Officers express whether they do not know or are unsure about the service	'Now the window service is quite satisfactory, and most of the officers make us feel satisfied. If he is not too familiar with the service, he will ask other colleagues to come and help him deal with the application for us.' (Company 4)
	Officers' attitudes	'The communication is smooth, and the efficiency is also improved. If some older people come to apply, or those who are not familiar with the service, they may have a lot of questions to ask. Attitude plays a vital role in such a situation.' (Company 26)
	Officers deliberately refuse to approve	'Every time I come, officers really solve the problem for me. I think this is pretty good because there will be less delays. If it can be solved now, it will be solved.' (Company 30)
	Appropriateness of officers	'I was in a taxation office in another district before, and I had conflicts with workers. He said 'Ah, give your ID card to me'. I said, 'Why should I have to give it to you? Can't I make an appointment by myself?' Everyone was watching. That was so embarrassing.' (Company 20)