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# Policy narrative, policy understanding and policy support intention: a survey experiment on energy conservation

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## ABSTRACT

Nowadays, policy narratives as a communication strategy are frequently used by governments to persuade target populations and obtain policy support. However, few studies have empirically examined whether and through what mechanisms policy narratives can enhance policy support intention. To fill this gap, this study uses the case of energy conservation policy to conduct a survey experiment among 300 industrial enterprises in Liaoning, China. The findings indicate that policy narratives are effective in strengthening policy support intention; this effectiveness is achieved through a mediating variable of subjective policy understanding. In other words, only when policy narratives make target populations think they understand the policy can they show strong policy support intention. Additionally, we examine how policy narratives should be designed to enhance subjective policy understanding. The study finds that a simple narrative form (i.e. reducing policy details and using images and symbols) and a narrative content with positive incentives (i.e. showing material and reputational incentives) are two measures to enhance subjective policy understanding, which then leads to strong policy support intention. The implications of these findings for the policy narrative theory and policy implementation practice are discussed at the end of the article.

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## KEYWORDS

Policy narrative; policy understanding; policy support intention; energy conservation; survey experiment

## 1. Introduction

Many pressing public problems, among them energy depletion and climate change, are defined by an underlying conflict sourced from incompatible incentives and value differences (Head and Alford 2015; Levin, Cashore, and Bernstein 2012; Peters 2017). They are therefore highly unlikely to be solved only by voluntary individual actions. Instead, their resolution is dependent on government efforts to design regulatory policies to direct individual behaviour (Ostrom 2010). For these regulatory policies to have their intended

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effect, they need support from target populations, which is vital for effective policy implementation, lowering monitoring costs, and reducing risks for policy withdraw due to political volatility (Linde 2018).

As early as the 1970s, scholars have recognized that the coercive approach to policy implementation and regulation enforcement is vulnerable to target populations' insufficient policy interpretation due to cognitive limitations and inadequate policy commitment (Majone and Wildavsky 1979). To gain policy support from target populations, nowadays, researchers and practitioners have turned to the narrative approach that functions as a communication strategy of policymakers to influence the way that target populations interpret and make sense of a policy (Jones 2014; McBeth et al. 2017). In formal academic terms, a policy narrative is a story that uses characters, a plot, and a moral to construct reality revolving around a particular policy issue (Stone 2002). Different narratives of the same policy issue may highlight different constructions of reality (McBeth, Lybecker, and Stoutenborough 2016). When individuals are exposed to the narrative story, they are transported into the story, become involved with the protagonists, "get lost" in the story, and accept the constructed facts (Jones 2014). And eventually, the individuals are persuaded by the narrative message. Arising from this string of literature is a view of policy implementation not making rational appeals to the public to support the policy, but rather using language and symbolic power, as well as some social construction and storytelling skills to influence the attitudes and opinions of target populations towards the public problems at hand and the solutions to be adopted (Jones and Song 2014; Merry 2018; Van Gerven 2019).

In addition to the direct causal relation between policy narrative and policy support intention, several studies suggest that policy narrative may influence policy support intention indirectly through the mediating effect of policy understanding (Porumbescu et al. 2017a, 2017b). In this article, we refer to policy understanding as "subjective" or "perceived" understanding, which measures the degree to which the target populations think they understand the policy. Thus, subjective policy understanding constitutes a perceptual basis for policy support intention. From this perspective, the existing literature explains that effective government communication and transparent policy presentation will lead to enhanced trust in government and improved perceptual understanding of government policies, which in turn would generate greater motivations to support the policies (Grimmelikhuijsen 2012; Grimmelikhuijsen et al. 2013).

Despite the discussions of the potential of policy narratives to bolster policy support intention, either directly or indirectly through policy understanding, there have been few empirical assessments on these theoretical postulates. To fill this gap, this article uses the energy conservation policy as an example to empirically examine whether creating a policy narrative will enhance the intention of enterprise managers to support energy conservation and whether the managers' perceived policy understanding can mediate such a relationship.

In examining these questions, this article adopts a survey experiment approach, where the industrial enterprise managers in Liaoning province, China, who are in charge of energy conservation and have the decision power to set up energy efficiency standards for their enterprises and to replace high energy consumption equipment with energy-saving production facilities, are presented with policy narratives that are designed in different forms and with varying contents.

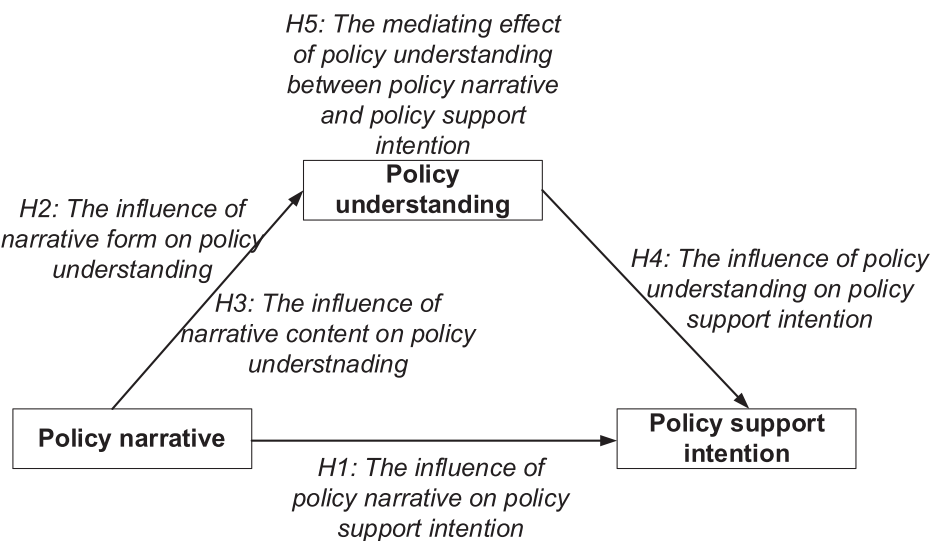
This article is organized as follows. Section 2 builds up the theoretical relationships between policy narrative, policy understanding, and policy support intention, where we bring forward our hypotheses to be tested. Section 3 introduces an experimental research method and presents detailed information on the operationalization of variables, experimental procedures, sample, and data analysis strategies. Section 4 reports the results. Finally, section 5 discusses the findings, concludes, and clarifies the research limitations.

## 2. Policy narrative, policy understanding, and policy support intention

In this section, we first draw on the Narrative Policy Framework (Jones and McBeth 2010; Shanahan, Jones, et al. 2018a; 2018b) to build up the direct relation between policy narrative and policy support intention (subsection 2.1). Afterward, we present another possible route from policy narrative to policy support intention through a mediating variable of policy understanding (subsections 2.2 and 2.3). Figure 1 shows our conceptual diagram that summarizes the theoretical relations between policy narrative, policy understanding, and policy support intention. We also assign hypotheses to particular pathways.

### 2.1. Linking policy narrative to policy support intention

The Narrative Policy Framework (NPF) stratifies the study of policy narratives into three levels of analysis: macro, meso, and micro. The macro-level examines narratives in a broad cultural and institutional context. The meso-level is concerned with coalition research. It focuses on describing coalition policy narratives (e.g. Shanahan et al. 2013) and how policy narratives shape coalition composition (e.g. Shanahan, Jones, and McBeth 2011a; Shanahan, McBeth, and Hathaway 2011b). At the micro-level, the NPF is primarily concerned with the role exogenous narrative communications play in



**Figure 1.** A conceptual diagram.

shaping individual opinions and perceptions related to public policy: the influence of policy narratives on individuals (e.g. Lybecker, McBeth, and Kusko 2013). Given our research purpose to examine the role of policy narratives in enhancing enterprise managers' policy support intention, in this article, we adopt the micro-level analysis.

Specifically, at the micro-level, Jones and McBeth (2010, 343–344) distinguish four potential direct causal mechanisms between policy narrative and policy support intention. These causal mechanisms are “breach, narrative transportation, congruence, and narrator trust”. Each of these causal mechanisms is hypothesized to act upon individual preferences through the vehicle of policy narrative. First, Jones and McBeth (2010, 343) propose that policy narratives can persuade individuals by presenting a story that does violence to the norm, breach banality, and rend people's expectations. That means, an individual exposed to a narrative will be persuaded when the level of the narrative's breach is high, because when little has changed and the world is moving along as we would expect, then there is no reason to alter either our attitudes or our behaviours. Second, Jones and McBeth (2010, 343) suggest that narrative transportation can act as a driver of narrative persuasion. Narrative transportation describes a situation where a reader is transported into a narrative and becomes involved with its protagonists, thus “get lost” in the story and persuaded by it. Third, Jones and McBeth (2010, 344) recognize that an individual will be persuaded by a narrative when the narrative is structured similarly to his or her life experience. Thus, congruence means the extent to which the narrative comports with that individual's understanding of the world. When a narrative reader perceives a high level of congruence, then he or she is more likely to be persuaded by the narrative. Finally, Jones and McBeth (2010, 344) point out that narrator trust is an important component that transfers the effect of narrative to message persuasion. The reason is that a source's trustworthiness, accuracy, objectivity, and expert status will influence a recipient's willingness to accept a message. As such, the persuasiveness of a narrative is conditioned by the extent to which individuals trust the source of the narrative.

Several studies have already been produced that validate the micro-level conception of the role narratives play in shaping public opinion and policy support intention at the individual level. For example, Lybecker, McBeth, and Kusko (2013) adopt the case of recycling to generally illustrate how narratives shape respondents' views of citizenship and intention to support the recycling policies. Specifically, studies by Shanahan, Jones, and McBeth (2011a) and Shanahan, McBeth, and Hathaway (2011b) examine how one of the aforementioned causal drivers, congruence, plays a role in shaping opinion and find that congruent environmental narratives strengthen existing opinions for those that already agree with the policy, but are also able to convert by shifting incongruent respondents' opinions away from their priors. In addition, Jones (2014) specifically explores the role of another causal driver, narrative transportation, in persuading individuals to accept the climate change policies. He finds that narrative transportation enables the respondents to find the narrative story more persuasive (Ibid).

Therefore, the micro-level analysis of the persuasiveness of policy narratives provides valuable insight into narrative persuasion and individuals' intention to support the policy. Based on the above-mentioned micro-level causal mechanisms (breach, narrative transportation, congruence, and narrator trust), we propose the following hypothesis:

**Hypothesis 1:** Policy narratives have a direct positive influence on policy support intention.

## 2.2. Linking policy narrative to policy understanding

In the previous part, we draw on the NPF to propose the direct positive relation between policy narrative and policy support intention. By contrast, in this part, we build up an indirect relation between policy narrative and policy support intention. The indirect relation is bridged by the mediating variable of perceived policy understanding. At this moment, we first link policy narrative to policy understanding.

The relation between policy narrative and policy understanding can be traced from Kaplan (1986), which contends that a policy narrative that meets certain story characteristics can explain to the public effectively which particular course of action is desirable and why. Later, since the 1990s, there is growing attention to postpositivist forms of policy inquiry, which asserts that policy reality is socially constructed, and policymakers should place discourse and symbolism, as well as the strategically wielded language presented to the public, at the core of the measures to assign meaning to a policy, in order to orient public attention and to ease public understanding of the policy (Fischer 2003; Fischer and Forrester 1993; Hajer 1995; Roe 1994; Stone 2002). In recent studies, scholars still hold the opinion that policy narratives may influence policy support intention by shaping target populations' understanding of a policy. As Crow and Jones (2018) argue, policy narratives can help policy advocates and regulators make their audiences care, pay attention, and capture necessary knowledge before they are primed to accept the presented policy facts.

Then, the question is how policy narratives influence policy understanding? First, drawn on the learning and instruction literature, we know that a learner's level of understanding can be affected by the form (or format) of the instruction presented to him/her (Sweller 1994). That means a narrator may design a narrative form that is easier for readers to understand. Wherein, the narrative form means the format of the policy narrative that the narrator arranges and presents the policy information (Sweller 1993). Second, the Narrative Policy Framework stresses that while form concerns the structural aspect of a narrative, content infuses meaning into the form to create policy realities (Jones and McBeth 2010). Narrative content can be strategically manipulated (e.g. sharpen certain aspects of a policy while levelling others) to intentionally shape policy realities in the service of the narrator's goals (Gilovich 1991).

Specifically, regarding narrative form, scholars suggest that policy narratives in a simple form are more effective in holding audiences' attention and shaping the audiences' ability to process and understand the information they receive. McBeth et al. (2007) warn that, because of "intellectual distance," efforts to weave a complex story may actually attenuate audiences' ability to understand what the story says. In political research, Bischof and Senninger (2018) point out that simple language or even catchy slogans, in campaign messages is more understandable for citizens. Cognitive load theory explains the above phenomena, that is, messages requiring less mental effort to process tend to be better understood (Sweller 1994). This is because the audiences have limited cognitive capacity and thus information that carries a low cognitive load is easier to use and internalize (Paas, Penkl, and Sweller 2003). As a following study, Guenther and Shanahan (2020) use images to reduce the cognitive load of a wildlife protection policy narrative and demonstrate that images effectively cause emotional reactions that influence policy perception of target populations, which in turn drive public

opinion toward the narrator's goal. This implies that, to improve policy understanding, policy narratives must be constructed to enhance their usability in the sense that the narrative form should reduce the mental effort one exerts to process and understand the information.

The extant research has identified a few strategies that one can use to create a simple form for policy narrative. First, Porumbescu et al. (2017a) highlight that reducing the "level of detail" can help simplify policy narrative. For instance, specific facts about a policy (e.g. policy background or detailed operating procedures) can be omitted in a policy narrative. Second, McBeth et al. (2007) recommend using "condensation symbols" to simplify stories and to evoke rich and vivid images in an audience. By definition, Graber (1976) refers to condensation symbols as a name, a word, a phrase or a sign that arouses emotional, mental or physical action. For instance, "American Dream" is a condensation symbol because it conjures a specific image within the audience and carries intense emotional and effective power of opportunity for prosperity and success. Denton (1980) reconceptualizes condensation symbols as "slogans" that function as a repetitive expression of an idea or purpose to persuade public or a more defined target group. Third, the concept of "processing fluency" can be applied to reduce the complexity of narrative form. In processing fluency studies, factors such as the colour of text, word choice, and font style all affect audiences' ability to understand the information they receive (Rennekamp 2012).

**Hypothesis 2:** Policy narratives presented in a simple form will be better understood by the target populations.

Regarding narrative content, policy narrative scholarship argues that the content sharing similar belief systems with audiences is more effective for policy understanding. As Kirkpatrick and Stoutenborough (2018) argue, the "social distance" (i.e. the extent of similarities of social characters and backgrounds) is a critical factor influencing the link between narrative content and policy understanding. However, in many situations, there exist conflicting beliefs and interests between the narrator and the audiences. As Shananhan, Jones, et al. (2018) reveal, policy narratives that are externally communicated under different belief systems (vs. internally held under similar belief systems) are created with purposes to persuade and to recruit audiences. Under these circumstances, it is important for narrators to embed proper positive incentives that are consistent with the audiences' view of the world. Thus, in crafting narrative content, different belief systems can be reconciled to some extent by presenting positive incentives in a narrative that are strong enough to stray problem understanding of the audiences from their original belief system.

One such positive incentive is a reputational incentive provided by narrators through the positive social construction of target populations, i.e. portraying target groups in positive terms such as intelligent, honest, responsible, public-spirited, and so on. As Schneider and Ingram (1993) argue, policy narratives with positive constructions are messages that can be absorbed by target populations more easily and affect their orientation and willingness of policy participation. Another kind of positive incentive is material incentive, which is arguably related to social construction of target populations. The construction of target populations provides a rationale for decision-makers to use policy tools (e.g. allocating benefits, or imposing penalties) to motivate target populations



to comply with policy. Schneider and Ingram (1993) also explain that for groups constructed as responsible and public-spirited, the policy tools can emphasize rewards (e.g. direct provision of resources and subsidies) that motivate the target populations to learn how to behave and take appropriate action voluntarily.

**Hypothesis 3:** Policy narratives with content of positive material and reputational incentives will be better understood by the target populations.

### ***2.3. Linking policy understanding to policy support intention***

Following the relation between policy narrative and policy understanding, here we construct the relation between policy understanding and policy support intention.

Although the morality politics literature suggests that enhanced subjective understanding of a policy might mobilize additional opposition particularly regarding controversial topics such as genetically modified food (Fernbach et al. 2019), various scholars in public policy, political science, and communication studies still hold in common the tenet that enhanced subjective understanding of a policy would generate greater motivational intention to support the policy (Fischer 1998; Schneider and Ingram 1993). For instance, Porumbescu et al. (2017b) reveal that a more effective government information disclosure may provide the citizens with confidence to understand the policy under discourse, which then enhances the citizens' intention to comply with the policy.

Scholars in political science suggest that constituents would vote differently if they think they understand the policy proposals more deeply. That means, if the constituents have a higher self-evaluation on the extent of policy understanding, they may choose different policy camps. According to Lupia (2015), citizens are consistently found to possess a low level of self-assessment on policy understanding, which results in the difficulties of building up effective and responsive governments (also see Mettler 2011). Porumbescu et al. (2017b) comment on this phenomenon to conclude that citizens are unwilling to support policies they think they do not understand voluntarily. Only the citizens who possess a high self-assessment on policy understanding will establish a motivational basis for policy support. The reason is that the improved subjective understanding of a policy likely corresponds to greater awareness of how policy support will benefit them or the community at large.

In the stream of public opinion research, Lo et al. (2015) find that a stronger subjective understanding may foster greater policy support intention because enhanced self-evaluation on policy understanding will bring about a higher level of perceived issue importance/salience. In such circumstances, the public will believe themselves to be affected by the problem if it is not solved. In the field of political communication, Sides (2016) discovers a similar finding, arguing that when citizens think they clearly know who will suffer from the problem, they will increase policy support intention to avoid consequences of the problem. Given the above-mentioned findings from the existing studies, we propose the following hypothesis:

**Hypothesis 4:** Better policy understanding will lead to greater policy support intention.

If our hypotheses 1–3 hold, it implies that policy narrative in a simple form, or/and with the content of positive (reputational and material) incentives, will enhance policy



understanding, which in turn leads to greater policy support intention. That means policy understanding will mediate policy narrative and policy support intention; it transfers the influence of narrative form and content to policy support intention. Therefore, we propose a hypothesis on the mediating role of policy understanding:

**Hypothesis 5:** Policy understanding play a mediating role between policy narrative and policy support intention.

Therefore, in this section, we propose 5 hypotheses around policy narrative, policy understanding and policy support intention. In the next sections, we first introduce our research method and data and then test these hypotheses.

### 3. Experiment and data

#### 3.1. Experiment context

The experiment context to test our hypotheses is Liaoning province, the northernmost coastal province of China. Liaoning province is one of the industrial bases in China. The city of Anshan, for example, is one of the largest iron and steel complexes in China. The capital city, Shenyang, is one of the top three industrial centres in China alongside Shanghai and Tianjin, accommodating large aerospace, machine tools, and heavy equipment manufactories.

Similar to many provinces in China, particularly those with strong heavy industrial sectors, energy conservation is an important concern in Liaoning. Liaoning's GDP in 2017 was 2.39 trillion Yuan, making it the 14th largest in China (Liaoning Provincial Bureau of Statistics 2019). However, Liaoning's focus on heavy industry makes the province face enormous challenges in energy saving. In 2017, the total energy consumption in Liaoning was 202.51 million-ton standard coals, ranking the 6th largest energy consumer among Chinese provinces (Liaoning Provincial Bureau of Statistics 2019).

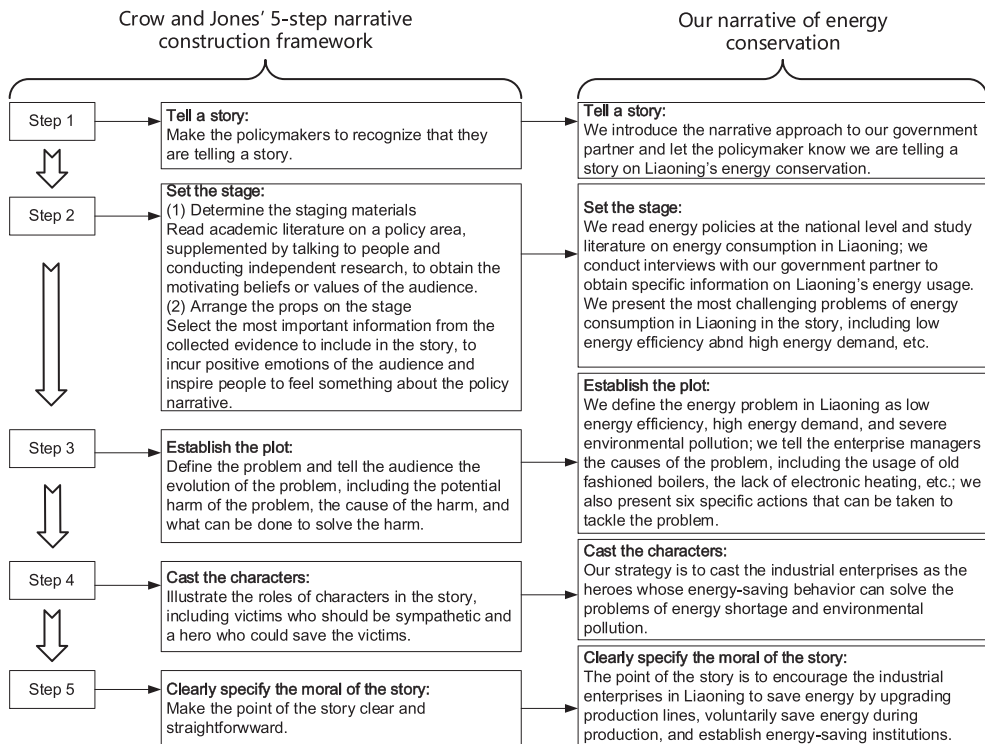
Liaoning province is trying hard to save energy in the industrial sector. Before, the coercive approach was adopted to energy regulation. For example, Liaoning imposed an energy consumption quota and mandatory energy saving standards to industrial enterprises under its jurisdiction. In addition, large energy consumption equipment needs to be approved by the government before it putting into operation. However, these measures are neither effective nor efficient. From 2000 to 2017, Liaoning's industrial energy consumption increased by 5% every year (Liaoning Provincial Bureau of Statistics 2019). The enterprises show low voluntary-based intention to comply with the imposed regulations. According to Zhu and Chertow (2017), various strategic responses of industrial enterprises to energy regulation have been discovered. For instance, because of low financial viability, some small or medium-sized enterprises are still using obsolete boilers with low energy efficiency and a large amount of polluting emissions secretly. Some large enterprises indeed replace old production facilities with more energy-efficient ones, but their purpose is not to save energy but to consume as much energy as possible within the quota. On the government side, our government partner reveals that they have inadequate manpower to monitor and check thousands of enterprises regarding their energy consumption situation. As a result, the government asks the enterprises to report their own periodic situations of energy saving, but "apparently these self-

inspection reports are less trustful due to the high possibility of data manipulation and concealment,” one government officer from Northeast Energy Authority says.

Thus, Liaoning attempts to rely on narrative tools as a new communication method to stimulate policy support intention and engender more voluntary-based policy compliance. We are invited by Liaoning provincial government to conduct experimental research where the aim is to test whether the narrative approach will make a difference and what designs on policy narrative are propitious for policy understanding and further for fostering policy support intention.

### 3.2. Operationalization

The first step is to construct a policy narrative on energy conservation. To do this, we draw on Crow and Jones' (2018, 221–223) 5-step narrative construction framework, consisting of “tell a story,” “set the stage,” “establish the plot,” “cast the characters,” and “clearly specify the moral of the story”. The application process of this framework in this article is shown in Figure 2. First, we introduce the narrative approach to our government partner to let the policymaker recognize we are telling a story. Then, we read national policies on energy conservation, study literature on Liaoning's energy consumption features, and interview our government partner to obtain specific knowledge concerning the policy goal, the policy background, the evolution/cause of the problem, the real or potential harm of the problem, the supporting evidence for the plight of



**Figure 2.** The construction of the policy narrative.

the victim, and the possible solution. Next, we organized this information to establish the plot, cast the character of the industrial enterprises, and specify the moral of the story.

Following these steps, we constructed a narrative that is presented in a complex form (with a high level of detail and in big chunk paragraphs) and without any positive incentives in its content. Starting with this original narrative, we developed other narrative versions in the “form” and “content” dimensions. We developed a simple narrative by reducing the level of detail and only presenting the backbone information with condensation symbols, colour text and different font styles. In the narrative content dimension, we manipulate by adding positive reputational and material incentives in the above-mentioned simple and complex versions of narrative. For instance, we tell that top enterprises in saving energy will make public by news media, so that the public will know which enterprises perform better in saving energy. In addition, we also clarify the material rewards of these enterprises, such as tax reductions and lower rates of bank loans. These positive incentives are practical policy measures to be implemented in Liaoning, not something simply mentioned in the narrative but not implemented in reality. Consequently, we have four versions of policy narratives (Figure 3). The narratives are originally written in Chinese, considering our audiences’ native language is Chinese. They are then translated into English as supplementary materials of this article.

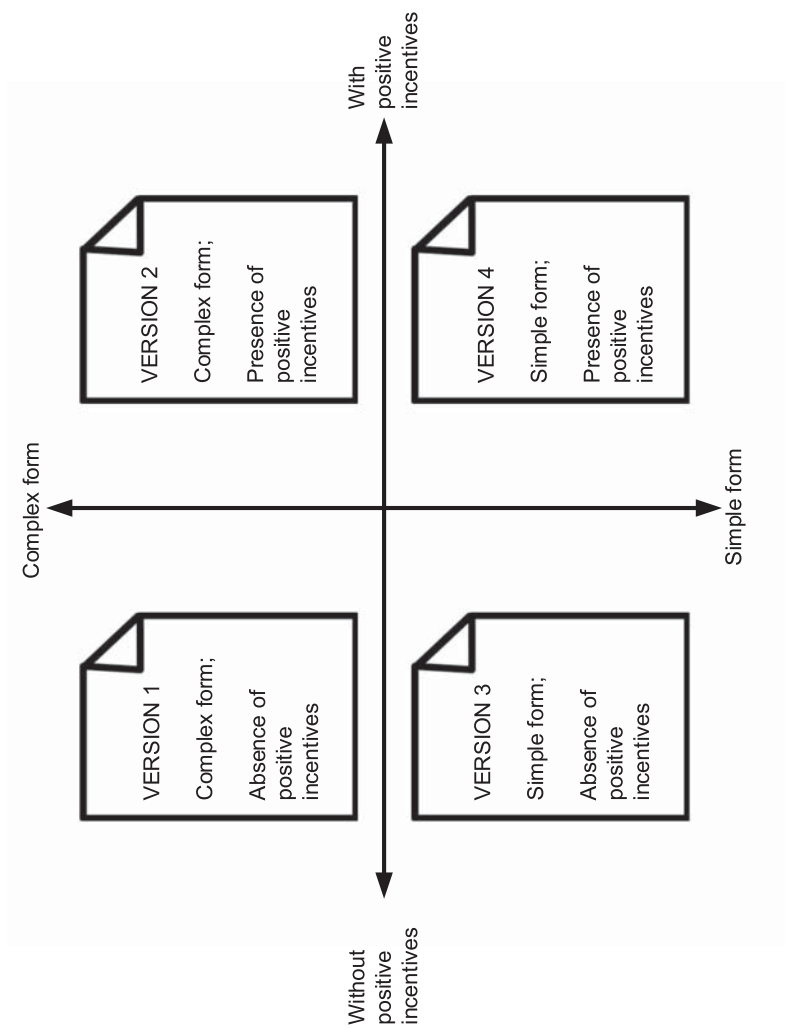
The second step is to operationalize policy understanding. To measure subjective policy understanding, the respondents are asked to answer three questions that reflect their self-assessment. The first question asks the respondents to evaluate their level of policy understanding using a 5-point Likert scale. The second question asks the respondents how many general questions out of five they believe they would be able to answer correctly. And the third question asks the respondents to evaluate their level of understanding of specific energy conservation terminologies using a 5-point Likert scale.

Finally, we operationalize policy support intention. One way is to measure the willingness of the respondents to pay for supporting the policy. Therefore, the respondents are asked to respond to the following item: “How much, measured by the percentage of the profit made by your enterprise, would you be willing to pay to support the implementation of the policy?” Respondents choose among scales ranging from 1 (0% of the profit) to 6 (more than 5% of the profit). We chose “5%” of the enterprise profit as the maximum level of policy support intention because, according to the National Urban Ecological Protection and Construction Plan (2015–2020), China’s total investment in environmental protection is more than 3.5% of the industrial output value, and the investment made from the secondary industry is even higher, approximately to 5%.

The operationalization items and descriptive statistics of policy understanding and policy support intention are shown in Table 1, in which Cronbach’s alpha indicates that the measurement scales have high reliability and consistency.

### 3.3. Experimental procedure

This study uses a 2×2 scenario-driven survey experiment. To collect data, we first make a sampling frame using the list of more than 1700 registered high-tech enterprises in Liaoning. Second, we use the Random Number Table Sampling Method to obtain 400 enterprises to have experimented, and the 400 enterprises are randomly divided into four groups, 100 enterprises in each group. Then, we collaborate with

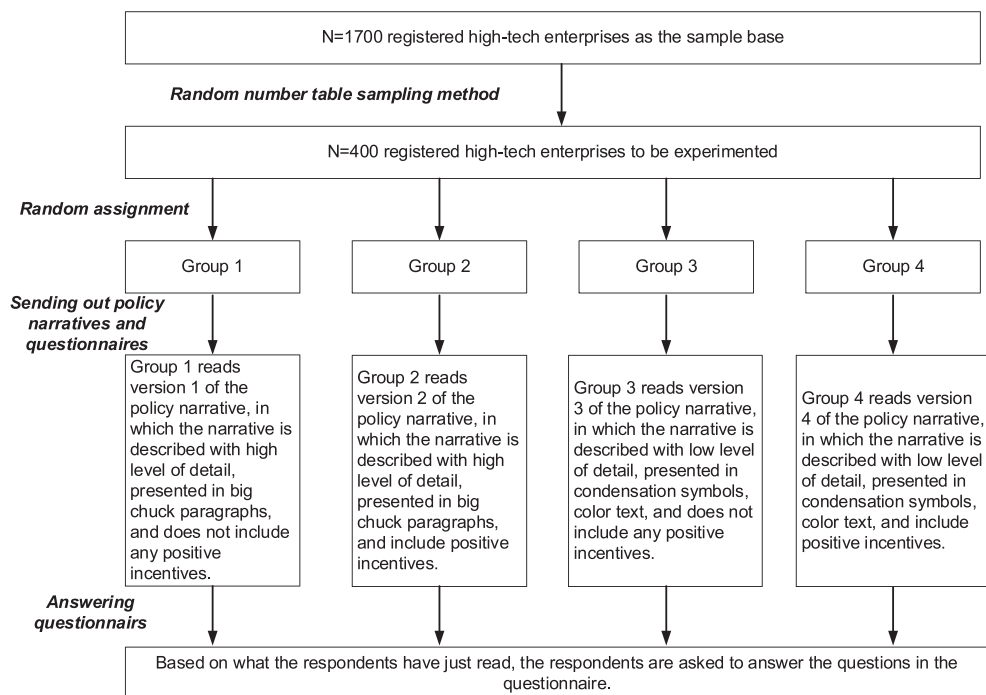


**Figure 3.** Four versions of policy narratives.

**Table 1.** Operationalization of concept and descriptive statistics.

Concept	Operationalization of concept	Mean	SD	Cronbach's $\alpha$
Policy understanding	1. To what extent you think you understand the procedures and requirements for implementing IECF?	3.96	0.623	0.972
	2. If ask you 5 general questions about IECF, how many do you think you may answer correctly?	4.01	0.657	
	3. To what extent you think you understand the certain energy conservation terminologies for implementing IECF?	4.02	0.641	
Policy support intention	1. How much, measured by the percentage of the profit made by your enterprise, would you be willing to pay to support the implementation of the policy?	3.78	1.535	–

Liaoning Provincial Government to issue the questionnaires through the “Government to Business Office Automation System,” which makes the enterprise managers take the questionnaires seriously, and then ensures a high recovery rate of the questionnaires. Four groups of respondents are invited to read the corresponding version of the narrative. After reading the narrative, the respondents from the four treatment groups are asked to finish the same questionnaire. Considering that our respondents are Chinese native speakers, the narrative and the questionnaire are both in Chinese, so that the language used would not affect their understanding. This data collection process was conducted between May and July 2018. And the collection process is illustrated in Figure 4.

**Figure 4.** Experimental procedures.

### 3.4. Sample

Based on the above-mentioned experimental procedure, a total of 343 questionnaires are recovered, of which 328 questionnaires are valid; the response rate is 95.6%; the effective rate is 82%. Since the numbers of questionnaires collected in four groups are different from each other (75 in group A, 87 in group B, 84 in group C, and 82 in group D), we randomly select 75 questionnaires from groups B, C, and D respectively to ensure accuracy of data analysis. Thus, the four groups have the same sample size of 75, and the final sample size is 300. As Table 2 shows, among the 300 surveyed enterprises, 35% have capitals less than 20 million RMB, 46% have capitals between 20 and 100 million; 12.48% enterprises' business life is less than 5 years, 23.5% between 6 and 10 years, 27.8% between 11 and 15 years, 26.4% between 16 and 20 years, and only 9.7% more than 20 years. The four groups have an approximate sample distribution, and the sample characteristics in this research have similar capital size and operating time distributions as all high-tech enterprises in Liaoning. Finally, a chi-square test is performed to compare across the treatment groups; the result shows no significant difference across the groups. Considering the randomization of our data, we do not use any control variables in our analysis.

### 3.5. Data analysis strategy

First, Cronbach's alpha (or internal consistency coefficient) is used to test the reliability of subjective policy understanding. The data are reliable if the value of Cronbach's alpha is greater than 0.7 (Diamantopoulos and Siguaw 2000). In our case, the Cronbach's alpha of subjective policy understanding is 0.972, which indicates that the measurement scales of subjective policy understanding have high reliability and consistency between related items.

Second, one-way ANOVAs are used to identify the treatment effects of *form* and *content* on policy understanding and policy support intention. We test the homogeneity of variance of policy understanding and policy support intention; the result shows that the data are suitable to ANOVAs ( $df_1 = 1$ ,  $df_2 = 296$ ,  $sig=0.362$ ;  $df_1 = 1$ ,  $df_2 = 296$ ,  $sig = 0.611$ ).

**Table 2.** Sample characteristics by treatment group.

Measure	Option	Group1 (N=75)	Group2 (N=75)	Group3 (N=75)	Group4 (N=75)	$\chi^2/df$ , $p$ value
Capital size (%)	=< ¥ 20 m(million)	40.0	32.0	37.3	40.7	1.01 ( $p=0.42$ )
	¥20m-¥50 m (include)	22.7	25.3	30.7	27.7	
	¥50m-¥100 m (include)	21.3	20.0	18.7	18.3	
	¥100m-¥200 m (include)	8.0	13.3	6.7	8.0	
	¥200m-¥400 m (include)	2.7	6.7	5.3	2.7	
	>¥400m	5.3	2.7	1.3	2.7	
Operating Life (%)	1-5 Years	18.6	10.7	9.3	11.2	0.56 ( $p=0.82$ )
	6-10 Years	24.0	26.7	20	23.4	
	11-15 Years	22.7	29.3	30.7	28.5	
	16-20 Years	20.0	26.6	32	27.2	
	>20 Years	14.7	6.7	8	9.7	

Note: If  $p$  value <0.05, there is significant difference between groups.

Third, to test hypotheses 1–3, the data were subjected to a 2 (simple form versus complex form) x 2 (presence of incentives versus absence of incentives) between-subjects effects ANOVA to investigate the main effects of *form* and *content* on policy understanding and policy support intention.

Finally, in testing the effect of policy understanding on policy support intention (hypothesis 4) and the mediating effect of policy understanding in transferring policy narrative to policy support intention (hypothesis 5), the bootstrap analysis supported by PROCESS macro for SPSS is used. We select Model 4 of the PROCESS macro with 2,000 bootstrap samples and a 95% confidence interval. Procedures of the bootstrap test adopted in this research are borrowed from the introduction of Hayes (2013). The criterion of judgment is that if 0 is not included in the 95% confidence interval of the average path coefficient, then the mediating effect is significant.

Comparing with other statistical methods such as causal steps proposed by Baron and Kenny (1986), bootstrapping approach in PROCESS macro developed by Hayes (2013) is more advantageous because it is not subject to the normality assumptions of statistics and thus it can provide unbiased estimates of mediating effect. Additionally, although Structural Equation Modeling (SEM) has shown superiority in conducting path analysis, the bootstrap test based on regression analysis is more appropriate given the nature of our data and research question. Because variables involved in this study are treated as observable variables rather than latent variables, and the variables are directly measured by the mean value calculated from the scores of related questions rather than special measurement model, all of which make it is technically infeasible to employ SEM to estimate the mediating effect.

To test the mediating effect of policy understanding more accurately, we treat group1 as the reference group and separate the influence path of form and content on policy understanding. First, we conduct PROCESS analysis on the groups treated with the same content (group1 and group3; group2 and group4) to test the mediating effect of policy understanding between narrative form and policy support intention. Then, the PROCESS analysis is performed on the groups with the same treatment of form (group1 and group2; group3 and group4) to verify the mediating effect of policy understanding between narrative content and policy support intention.

## 4. Results

### 4.1. Testing the differences between treatment groups

We begin our analysis by testing the differences of means of policy understanding and policy support intention by treatment group. Table 3 shows that the average ratings of policy understanding are higher for groups 3 and 4 who read the policy narrative in a simple form than for groups 1 and 2 who read the narrative in a complex form. This is in line with the argument that a policy narrative is more likely to be understood when it is presented in a simple form. Regarding policy support intention, groups 2 and 4 who read the narrative with positive incentives rate higher scores than groups 1 and 3 who read the narrative without any positive incentives. This implies that providing enterprise managers with positive incentives is helpful for policy support intention.



**Table 3.** One-way ANOVAs of four groups.

		N	Mean	SD	SE	F	Sig.
Policy understanding	Group1	75	3.72	0.634	0.073	8.72	0.001
	Group2	75	4.043	0.590	0.068		
	Group3	75	3.967	0.669	0.077		
	Group4	75	4.247	0.635	0.073		
Policy support intention	Group1	75	2.77	0.981	0.113	19.34	0.001
	Group2	75	4.13	1.588	0.183		
	Group3	75	3.81	1.468	0.169		
	Group4	75	4.41	1.525	0.176		

Note: Group1 is the control group with the treatment of complex form without positive incentives; Group2 is the study group with the treatment of complex form and positive incentives; Group3 is the study group with the treatment of simple form without positive incentives; Group4 is the study group with the treatment of simple form and positive incentives.

#### 4.2. Policy narrative, policy understanding and policy support intention

Table 4 presents the results for policy understanding and policy support intention of the total sample under different conditions of policy narrative.

For the direct influence of policy narrative on policy support intention, as hypothesis 1 predicted, significant main effects of form ( $F(1,299) = 16.407, p = 0.001$ ) and content ( $F(1,299) = 36.175, p = 0.001$ ) on policy support intention emerge. That means the respondents exposed to the simple narrative form exhibited a higher level of policy support intention ( $M = 4.11, SD = 1.51$ ) than those exposed to the complex narrative form ( $M = 3.45, SD = 1.02$ ). Moreover, the respondents exposed to the content with positive incentives exhibited stronger policy support intention ( $M = 4.27, SD = 1.56$ ) than those not exposed to any positive incentives ( $M = 3.29, SD = 1.22$ ). Besides, the interaction between the effects of form and content is also significant ( $F(1,299) = 5.439, p = 0.02$ ). Given these results, our hypothesis 1 stands.

For the indirect relationship between policy narrative and policy support intention, we first examined the relation between policy narrative and policy understanding. As hypothesis 2 predicted, a significant main effect of form emerges ( $F(1,299) = 9.483, p = 0.002$ ). That means, the respondents exposed to the simple narrative form exhibited a better policy understanding ( $M = 4.11, SD = 0.651$ ) than those exposed to the complex narrative form ( $M = 3.88, SD = 0.612$ ). Also, as hypothesis 3 supposed, a significant main effect of content emerges ( $F(1,299) = 17.05, p = 0.001$ ). It indicates that the respondents exposed to the content with positive incentives exhibited a higher level of policy understanding ( $M = 4.145, SD = 0.581$ ) than those not exposed to any positive incentives ( $M = 3.844, SD = 0.632$ ).

To examine the effect of policy understanding on policy support intention, we conduct a series of PROCESS analyses. The results in Table 5 show that the positive effect of policy

**Table 4.** Tests of between-subjects effects ANOVA (2×2).

Dependent variable	Policy understanding		Policy support intention	
	F	Sig.	F	Sig.
Total sample ( $N=300$ )				
Form	9.483***	0.002	16.407***	0.001
Content	17.05***	0.001	36.175***	0.001
Form*Content	0.088	0.767	5.439**	0.02
Adjusted $R^2$	0.306		0.164	

Note: \* significant at 0.1 level; \*\* significant at 0.05 level; \*\*\* significant at 0.01 level.

understanding on policy support is significant in four models. Thus, these results support our hypothesis 4, that is, greater policy understanding will lead to enhanced policy support intention.

Besides, we generate additional interesting findings from the results of PROCESS analysis regarding the direct relationship between policy narrative and policy support intention. The direct influence of narrative form and narrative content on policy support intention is conditional: a significant and positive relationship between narrative form and policy support intention exists only when the respondents are exposed to the narrative without any positive incentives (*Group1* & *Group3*, coefficient = 0.95,  $t = 4.67$ ); a significant and positive relationship between narrative content and policy support intention exists only when the respondents are exposed to the narrative in complex form (*Group1* & *Group2*, coefficient = 1.21,  $t = 5.56$ ).

### 4.3. Testing the mediating effect of policy understanding

Table 6 presents evidence of a conditional mediating effect of policy understanding between policy narrative and policy support intention. The results indicate that policy understanding indeed plays a mediating role between narrative content and policy support intention for all samples (*Group1* & *Group2*, CI 95% = 0.027, 0.307; *Group3* & *Group4*, CI 95% = 0.044, 0.403). However, the mediating role of policy understanding in the relationship between narrative form and policy support intention emerges only when the respondents are exposed to the content with positive incentives (*Group2* & *Group4*, CI 95% = 0.007, 0.374). These findings support our hypothesis 5 on the mediating role of policy understanding.

## 5. Conclusions and discussions

### 5.1. Conclusions and external validity

Based on the survey data from Liaoning enterprises, this article concludes that policy narrative has a direct positive influence on policy support intention. Moreover, we also prove an indirect relation between policy narrative and policy support intention, via a mediating variable of policy understanding in a subjective or perceived sense. We find that a

**Table 5.** Results of PROCESS analysis.

	Group1 & Group3 $N=150$	Group2 & Group4 $N=150$
	Coefficient (t)	Coefficient (t)
Form → Policy understanding	0.25*** (2.32)	0.20** (2.03)
Form → Policy support intention	0.95*** (4.67)	0.09 (0.4)
Policy understanding → Policy support intention	0.34** (2.18)	0.88*** (4.53)
	Group1 & Group2 $N=150$	Group3 & Group4 $N=150$
Content → Policy understanding	0.32*** (3.23)	0.28*** (2.63)
Content → Policy support intention	1.21*** (5.56)	0.39 (1.65)
Policy understanding → Policy support intention	0.43*** (2.52)	0.73*** (4.11)

Note: 1. \* significant at 0.1 level; \*\* significant at 0.05 level; \*\*\* significant at 0.01 level two-tailed t-tests. 2. Group1 is the control group with the treatment of complex form without positive incentives; Group2 is the study group with the treatment of complex form and positive incentives; Group3 is the study group with the treatment of simple form without positive incentives; Group4 is the study group with the treatment of simple form and positive incentives.

**Table 6.** The mediating effect of policy understanding in PROCESS analysis.

	Independent variable	Mediate variable	Dependent variable	Average effect	95% CI	
					LL	UL
Group1 & Group3 (N=150)	Form	Policy understanding	Policy support intention	0.08	-0.001	0.208
Group2 & Group4 (N=150)	Form	Policy understanding	Policy support intention	0.18	0.007	0.374
Group1 & Group2 (N=150)	Content	Policy understanding	Policy support intention	0.14	0.027	0.307
Group3 & Group4 (N=150)	Content	Policy understanding	Policy support intention	0.21	0.044	0.403

Note: Group1 is the control group with the treatment of complex form without positive incentives; Group2 is the study group with the treatment of complex form and positive incentives; Group3 is the study group with the treatment of simple form without positive incentives; Group4 is the study group with the treatment of simple form and positive incentives.

simple narrative or/and a narrative with positive incentives can lead to greater policy understanding, which further brings about enhanced policy support intention.

Usually, experimental studies are conducted in a constructed environment, and thus, the conclusions will suffer from threats to external validity. Unlike these experimental studies, our study has a relatively high level of external validity because we collaborate with the provincial government and send out the questionnaires through the “Government to Business Office Automation System”. That means the enterprises received the messages from the real government-enterprise communication system, which is presumably like what they normally encounter in true government policy narratives. Thus, our conclusions obtained from this survey experiment will still be valid in the real target environment.

## 5.2. Theoretical and practical significance

This research has both theoretical and practical significance. Theoretically, our findings contribute to the Narrative Policy Framework (NPF). Much of the NPF literature centres around the direct link between policy narrative and policy support intention (e.g. Shanahan, Jones, and McBeth 2011a; Shanahan, McBeth, and Hathaway 2011b). Our research provides another possible route from policy narrative to policy support intention through a mediating variable of subjective policy understanding. The introduction of the new concept, subjective policy understanding, is crucial for NPF studies. Without this concept, the extant NPF literature does not reveal the underlying mechanism driving policy narratives to policy support intention and does not explain why the narratives of different designs may lead to varying levels of support intention. Thus, the use of subjective understanding offers us an opportunity to explore the implicit link between policy narrative and policy support intention. In addition, new theoretical thinking can develop regarding how to design policy narratives to improve the audience’s subjective policy understanding.

In a more general sense, our study adds to the communication literature. Lybecker and colleagues (e.g. Lybecker, McBeth, and Kuskos 2013; Lybecker, McBeth, and Stoutenborough 2016; McBeth et al. 2017; McBeth, Lybecker, and Stoutenborough 2016) have devoted the most concerted effort to study how narrative communication affects

policy opinion and outcome. Although significant, their studies usually focus on manipulating narrative content and form through characters. In this article, we illustrate how narrative content and form can be manipulated by adding incentives and reducing complexity. As our findings reveal, policy narratives presented in a simple form or/and with positive incentives can contribute remarkably to policy support intention. Thus, the scholarship needs to acknowledge the importance of simple forms of communication and the role of positive incentives for communicators.

Practically, our findings have two implications. First, it implies that, when weaving policy narratives, practitioners (public administrators, policy analysts, and other experts) need to consider the audience's subjective understanding. Before, government decision-makers are usually trapped in promoting their own narratives blindly rather than analyzing their audience. Our study is thus a timely reminder for the decision-makers to build up a bridge with the audience. To do so, our second practical implication concerns what type of communication style the audience prefers. Our findings imply that simple forms of communication and communication embedded with positive incentives could be valuable instruments in elected policymakers' toolkit.

### 5.3. Limitations and future research agenda

Since our experiment participants are enterprises, the scope condition for generalizing our experiment results is limited to *enterprises*. Whether a policy narrative in a simple form and/or with contents of positive incentives will contribute to *citizens'* policy understanding and policy support intention is subject to future research. Within the scope of enterprises, our conclusions obtained from the energy sector are applicable to other policy fields in China where an underlying conflict exists between enterprises' interest and the public interest, and thus regulatory policies need to be implemented. Such policy areas include, but are not limited to, environmental protection, production safety, labour welfare, and taxation. In such policy fields, Chinese governments face a common challenge (or dilemma) of creating a business-friendly environment and concurrently safeguarding the general public interests. Our advice concerning more understandable policy presentation and use of positive incentives just serve as effective tools to solve this dilemma because it fosters voluntary-based policy support.

We also need to point out that policy issues in China are not subject to partisan ownership. This means that partisan ownership does not exist in China and thus it does not shape public preference and support intention for policy issues. This also means that our research results were not influenced by partisan ownership, but only by our narrative form and content variables. The absence of partisan ownership of an issue in China makes the generalizability of our research findings to other countries conditional. Since policy issues in China are much less partisan than those in western countries like the U.S. and most European countries, public preference and support to a policy issue will not depend on, or be influenced by the partisan ownership of the issue. Therefore, our results are more generable to countries like Singapore and Russia where partisan ownership of an issue is absent. However, as for countries where public preference and policy support intention is seriously affected by partisan ownership, the generalizability of our results will be relatively limited. And this raises a further research question as to

how partisan ownership of an issue will influence the effect of policy narrative form and content.

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