
article

The dynamic role of governments in adopting policy innovations in China

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A growing number of studies have paid attention to the dynamic nature of vertical government interactions in authoritarian China. Yet, less attention has been paid to the question of why higher-level governments play different roles in diverse cases of innovation adoptions. Building on the extant literature, this study introduces the concept of innovation copyright, that is, the perceived ownership of the innovation, to explain the different roles of higher-level government involvement in innovation adoption. A comparative case study of policy innovations in China highlights that if higher-level governments perceive that they own the innovation copyright, they act as proactive facilitators, and if higher-level governments perceive that the innovation copyright belongs to local governments, they are involved as political backers. The copyright structures the expectations of higher-level and local governments and as a consequence determines their roles in innovation adoptions.

Key words policy innovation • higher-level government • vertical government interaction • innovation copyright • expectation • China • policy diffusion • innovation adoption

To cite this article: Huang, B. and Wiebrecht, F. (2021) The dynamic role of governments in adopting policy innovations in China, *Policy & Politics*, vol 49, no 4, 633–651, DOI: 10.1332/030557321X16292224745415

Introduction

Innovation has become one of the most widely used ‘buzzwords’ not only in organisation studies but also in public policy. Scholarly research agrees that innovation in public policy is a vital means for governments to respond to increasing challenges both globally and locally (Walker, 1969; Berry, 1994; van Buuren et al, 2020; Demircioglu and Vivona, 2021; Makse, 2021). Specifically, the adoption of innovation has provided a research puzzle for academics, posing questions of why certain institutions are more likely to innovate than others and how innovations diffuse across different jurisdictions.

By treating governments as monolithic, a number of studies on policy innovation have investigated the antecedents that drive or bar the adoption of innovations. However, the role of higher-level governments has not been fully considered so far, especially in authoritarian contexts where local governments are highly dependent on higher-level governments. Traditionally, coercing local governments into adopting an innovation has been highlighted as the most direct form of higher-level government involvement in innovation adoptions (for example, [Berry and Berry, 2014](#); [Hannah and Mallinson, 2018](#)). Even in democracies, federal or central governments are often found to assign innovations to local governments through coercion. Yet, local governments are frequently able to defy these top-down mandates ([Balla and Deering, 2015](#); [Hannah and Mallinson, 2018](#)) because they generally tend to be more independent from higher-level governments in democratic countries (for example, [Jans et al, 2017](#)). Authoritarian countries like China, however, are more characterised by the need to maintain stability, hierarchical command chains, and performance evaluation-based personnel systems ([Zhu, 2014](#); [Wang, 2020](#)).

Despite the centralised political power in China, the central government in China does not always use coercion but instead has been observed to play two distinct roles in intervening innovation adoption – active facilitator and involved backer ([Heilmann, 2008](#); [Yu and Huang, 2019](#); [Zhu and Zhao, 2021](#)). Why do higher-level governments intervene proactively in local innovations in some cases and are merely involved as political backers in others? This divergent role is particularly puzzling given that China as a politically centralised country has the capacity to coerce local governments, but also because centrally planned policy experiments have been attributed a great role in China's economic development (for example, [Heilmann, 2008](#); [Wang, 2009](#)). Answering this question is theoretically significant because evidence has shown that the influence of higher-level governments takes precedence over other factors in authoritarian systems ([Zhang and Zhu, 2020](#)). Thus, analysing the variation of higher-level government involvement in local innovation adoption can further advance the theoretical understanding of the vertical dimension of innovation theory. In practice, it also has some policy implications for how to properly leverage higher-level authority to promote innovation adoption at the local level.

In order to answer this question, this article introduces the concept of the 'innovation copyright', that is, the perceived ownership of the innovation, to explain the different roles of higher-level government involvement in innovation adoption. By analysing two cases from China, we highlight that although local governments in China are less independent from higher-level governments, innovation adoption processes are by no means unilateral interactions. When higher-level governments perceive themselves to own the copyright of innovation, they tend to utilise more positive strategies like incentivising to facilitate innovation adoption at the local level. When it is the local government that holds the copyright of innovation, higher-level governments may be involved as a backer of the adoption of innovation.

The contributions of this article are threefold. First, it considers two different strategies of higher-level government involvement in innovation adoption and proposes the innovation copyright as an essential factor determining the nature of the relationship between higher and lower levels of government. Second, it adds to the growing literature that emphasises the dynamic relationship between different levels of government in introducing innovations (for example, [Liu and Li, 2016](#); [Zhu and Zhao, 2021](#)). Instead of focusing on cases in which the central government has a strong

interest in unifying policies nationally (Zhu and Zhao, 2021), we highlight that this is not always a given but instead that the higher-level governments' expectations are crucial variables. This study also affirms that the priorities of higher-level governments affect the choices available for local governments in authoritarian regimes. Third, this study makes explicit the idea that innovation generation and innovation adoption are different stages of the innovation process and, thus, may involve different actors. The assumption that the generator of the innovation is also the adopter should be relaxed, and this distinction contributes to our understanding of how the vertical dimension plays an essential role in the wider innovation process.

In the following, this article will be situated in the broader literature on innovation adoption and propose our theoretical framework. We will then address two cases from China that highlight alternative roles that higher levels of government can take in the process of innovation adoption. The comparative analysis of cases is further presented, and the conclusions are drawn at last.

Literature review and theoretical framework

Although innovations have traditionally been associated with the private sector, researchers have increasingly paid attention to the rise of the 'innovation imperative' in the public sector (for example, Jordan, 2014). This article also seeks to contribute to the growing literature on innovations in the public sector. In a seminal work, Rogers defines an innovation as 'an idea, practice, or object that is perceived as new by an individual or other unit of adoption' (2003: 12). We largely follow this definition with the addition that we are primarily interested in innovations in the public policy domain.

Current studies on policy innovation mainly discuss how environmental, organisational, innovation and individual antecedents affect the adoption of innovation (de Vries et al, 2018). Prior research has for instance highlighted the importance of features of the innovation itself (for example, Rogers, 2003; Carter and Bélanger, 2005), characteristics of individuals embracing innovative behaviour (for example, Borins, 2000; Bartlett and Dibben, 2002; Zhu and Zhang, 2016), organisational qualities leading to innovation (for example, Damanpour, 1991; Walker, 2006; Mei and Wang, 2017) as well as environmental antecedents of a certain jurisdiction (for example, Moon and deLeon, 2001; Mallinson, 2021).

In terms of the vertical dimension, that is, the influence of higher-level governments (for example, national and provincial/state levels), scholars of policy innovation have long noticed the role that higher-level governments play in influencing innovation adoption at the local level. Early studies have underscored that higher-level governments can use coercive power to force local governments to adopt policy innovations (for example, Berry and Berry, 2014; Zhu, 2014). Coercion, in its literal meaning, refers to actions that persuade actors to do something that they do not want to do, using force or threatening to use force. As a driver of innovation adoption, coercion is equal to a mandate (Walker et al, 2011). In some previous studies, researchers understood coercion in a broad sense, as, for example, top-down incentivising is also regarded as a coercive approach (Shipan and Volden, 2008; Walker et al, 2011). This may be accurate in democracies because it presumes that local governments otherwise would not want to adopt the policy innovation. However, in authoritarian countries like China, this presumption is usually not valid since local governments are upwardly

accountable and highly dependent on higher-level authorities' sponsoring (Wong, 2011; Wu, 2012; Wu and Wang, 2013). When top-down incentives are utilised, local governments often need to compete for the opportunity to adopt innovations (as described in the following cases) rather than having to be convinced by coercive approaches. In order to better decompose and theorise the role of higher-level governments in innovation adoption, this article understands coercion in the sense that the literal meaning of the term conveys.

More recently, research shows that similar to the function of 'laboratories of democracy' in the United States,¹ authoritarian regimes such as China also harness sub-national governments to innovate in response to public issues. It has been found that beyond coercion, other strategies are also frequently employed by higher-level governments to mobilise local governments to adopt innovations (Stensdal, 2020). For instance, these can include vertical bargaining (Mei and Pearson, 2014), delegating the power of exploring policy goals and instruments (Zhu and Zhao, 2021), and releasing signals regarding the importance of policies (Zhang and Zhu, 2020). These studies revealed softer approaches by higher-level governments in imposing innovations. They presume, however, that as long as higher-level governments exist, typically they are proactive and initiate the vertically driven innovation adoption. In other words, the activities of higher-level governments are usually the starting points of vertically-driven innovation adoptions. However, some studies have noted that in some cases higher-level governments only get involved in innovation adoption processes after being asked to do so by local governments instead, as Heilmann (2008: 9) for instance holds, 'most experimental efforts are set off by local policymakers who, to tackle pressing problems in their jurisdiction and at the same time pursue personal career and material interests, seek the informal backing of their pilot efforts by higher-level policy patrons'. In this scenario, higher-level governments back the innovation adoption as requested by local governments but are not engaged in the process otherwise (Heilmann, 2008; Yu and Huang, 2019).

Innovation copyright

From the perspective of higher-level governments, we highlight that one essential feature determining their behaviour in innovation adoption is the innovation copyright which here refers to the perceived ownership of the innovative idea. The perceived ownership does not necessarily describe the adoption of innovation but is better understood as the innovation generation. Innovations, as other policymaking processes, pass through several stages before finally being implemented (Patton et al, 2015). Eggers and Singh (2009) for instance identify four separate processes, namely the generation of ideas, selection of ideas, implementation of new ideas, and the dissemination of new practices. Hartley et al (2013) modify this model slightly and highlight five different stages: problem definition, idea generation, testing, implementation and diffusion. However, this distinction has not been made explicit in studies of innovation adoption and, therefore, some studies implicitly assume that the adopter of the innovation is the generator as well. Thus, importantly for the contributions that this article seeks to make, innovation adoption is different from innovation generation. Innovation generation focuses on the production of innovative policies or programmes, while innovation adoption concentrates on (partially) accepting or rejecting a policy or programme. We

contribute to the increasingly accepted notion that we need a more nuanced approach taking different stages and actors into consideration (Hartley et al, 2013; Patton et al, 2015).Applying a more dynamic approach that also takes interactions between different actors in different stages into account has for instance also been applied to analysing drivers and barriers of innovation (Clausen et al, 2020; Cinar et al, 2021).

The innovation copyright is particularly important for innovation adoption because it structures actors’ expectations about innovations. To an extent, it functions similar to traditional property rights. The property right theory holds that when property rights are clear, externalities can be mitigated, and the market bodies have more stable expectations and thus could be encouraged to invest, innovate and trade (Coase 1960; Demsetz, 1967). For governments, the situation is similar except that they are not only concerned with economic gains but also political aspects. A more specified property right or copyright, therefore, provides different actors with clearer and more stable expectations of returns. Regarding policy innovation, we hold that this innovation copyright as perceived by higher-level governments largely determines their roles in innovation adoption and explains why they are still willing to play the role of a political backer for innovations that they have not designed.

Highlighting the innovation copyright as perceived by higher-level governments reveals that their priorities largely determine the choices available for local governments. In authoritarian regimes such as China, the vertical dimension trumps other concerns of local governments in the sense that demands from higher-level governments generally take precedence (Huang and Kim, 2020). Local officials in China have a greater propensity to implement demands coming from above than to be influenced by other factors because of the strictly hierarchical structure of the Chinese system and their chances for career advancement or retaining their positions (Chan and Li, 2007; Zhu, 2014; Cai et al, 2020). Table 1 highlights higher-level and local level governments’ expectations depending on which level holds the innovation copyright. When higher-level governments hold the innovation copyright, they proactively promote the innovation by mandates (Zhu, 2014) or comparative trials (Zhu and Zhao, 2021) and look for places to adopt this innovative idea. This gives the higher-level government the chance to initiate an auction-like process for those local governments deemed suitable and willing to adopt given innovation. As Zhu and Zhao (2021) found, this is an important measure for them to increase their legitimacy and authority over local governments. In addition, the importance of the copyright also pertains to Zhu and Zhao’s (2021) central concerns of replicability and diffusion. Innovations in which the higher-level government holds the copyright are much easier to be scaled up at a later stage because it has already designed its policy goals (and instruments) that need to be replicated in other localities. Thus,

Table 1: Copyright of innovation and actors' expectations

		Stable expectations	
		Higher-level government	Local-level government
Copyright	Higher-level government	Adaptability (Ability to scale up)	Benefits known + Showing loyalty
	Local-level government	Mitigating learning externality + Less risk in case of failure	Autonomy to design innovation for local issues + Displaying innovative capacity

holding the copyright promises a smoother adaptation and diffusion process for the higher-level government.

On the other hand, when the higher-level government holds the copyright of the innovation, it also signals benefits that come along with the innovation for local governments. Policy innovations led by the higher-level government are often successful (Zhu and Zhao, 2021). The benefits for local governments are not only of a financial nature but also include their display of loyalty to the higher-level government on whose political or financial resources they often depend (Zhang and Zhu, 2020). However, even in the case of unsuccessful innovations, the risks for local governments are manageable since the higher-level government will observe the consequences and stop the innovation if necessary (Zhu and Zhao, 2021). Yet, part of the considerations for the local governments is also the fact that the higher level's copyright may impede their autonomy as they are often only left with the decision whether to initiate that particular set of policy innovations or not.

When higher-level governments perceive that the innovation copyright belongs to the local government, they nevertheless get involved by local governments to function as backers in innovation adoption. They may for instance support their subordinates by authorising them with special powers to adopt innovations (Heilmann, 2008; Yu and Huang, 2019). Higher-level governments are willing to do so because they detect local ownership of innovation in this way, thus protecting local governments' initiative to innovate and potentially identify successful experiments. Prior research has highlighted the issue of learning externalities, as for instance, Strumpf (2002: 208) notes that 'experiments benefit not just the innovating government but also potential imitators, and so local governments have an incentive to free-ride off their neighbors'. In other words, local governments may simply wait to replicate other localities' successful innovations instead of taking any risk to innovate themselves. By getting involved as political backer, the higher-level government can mitigate this learning externality and safeguard that local governments are not merely free-riding but instead develop innovative solutions for local issues.

In addition to encouraging local governments to innovate, backing innovations for which local governments hold the copyright is also a strategy of risk aversion for the higher-level government. Studies have shown that local governments in China have an interest in intentionally choosing different policy instruments in order not to appear as copycats (Liu and Li, 2016). Thus, the higher-level government may end up in a situation in which it has to deal with inconsistent or even contradictory policies pursued by local governments. However, we hold that even in the case of a local government holding the copyright, the risks for the higher-level government are controllable. Local governments often lack autonomy and political or financial resources to advance local innovations single-handedly (Zhang and Zhu, 2020), and despite having the innovation copyright, they are often required to receive formal or informal backing from higher-level governments (Heilmann, 2008). Therefore, by deciding to back local innovations or not, higher-level governments can preemptively avoid situations in which local governments pursue inconsistent or even contradictory policy experimentations. After deciding to back a local innovation, higher-level governments can first monitor the progress and still shift the blame to the local governments in case of innovation failures (Tsai and Dean, 2014).

For local governments, the main advantage in having the privilege to hold the innovation copyright is the autonomy to deal with a particular local issue that may not

be on the higher-level government's agenda. As mentioned earlier, local governments cannot go against the interests of the higher-level government and also often lack the necessary resources to advance policy innovations. Thus, authorisation from higher-level governments is usually needed which adds legitimacy to their innovation and allows local governments to leverage more resources from other actors (Heilmann, 2008; Yu and Huang, 2019). Besides, seeking approval from higher-level governments is also a way for local governments to substantiate their copyright in particular policy innovations and demonstrate their innovative capacity to superiors, which is seen as an important element of local government performance.

Method and data

Method

This study adopts a multiple-case study design. The case study approach is widely used for confirming, challenging or extending theories (Blatter and Haverland, 2012; Yin, 2015) and therefore allows us to demonstrate how the innovation copyright shapes the behaviour of higher-level governments in innovation adoption.

The cases for our comparative study were chosen in accordance with the logic of theoretical replication (Yin, 2015). Two cases from China were selected, namely the Market Procurement Trade Policy in Haining City, Zhejiang Province, and the Industry–Academia Research Collaboration Policy in Xinchang County, Zhejiang Province. The reasons are threefold. First, both cases include interactions between higher levels of government and local governments. Second, the cases represent two typical possibilities of intervention from superiors, and their approach of 'policy experimentation' (Heilmann, 2008) is commonly seen in the Chinese context (Hasmath et al, 2019). If we regard the intervention of higher-level governments as a continuous spectrum in which non-involvement and coercion constitute the outer fringes, then the role of higher-level governments in these two cases illustrates two alternative modes of involvement. Nevertheless, the potential forms that higher-level involvement may take are diverse. The cases that were selected in this study are therefore illustrative of two typical mechanisms of higher-level authorities' involvement and by no means claim to cover all possibilities. Third, the two places featured in the cases are both located in Zhejiang Province (see Figure 1) which is known as the most innovative province in China (Zhu and Zhang, 2016; Huang and Yu, 2019). While higher-level authorities in these cases refer to the national and provincial governments in particular, the arguments put forward in this article may be extended to any higher-level authority depending on the context and the administrative structures.

Data

Data were collected through document analysis and semi-structured in-depth interviews with key actors involved in the processes. In order to safeguard the credibility and validity of the data collected, the data gathered from unpublished documents, published documents, and interviews were triangulated.

We initially analysed the unpublished documents provided by both higher-level governments and local governments, including the introduction of the innovation

Figure 1: The geographical location of the two cases

programme, the meeting notes of the higher-level governments regarding the innovation, the report of the local governments justifying the reasons for carrying out the innovation, and the process records from idea formulation to practice. These unpublished documents were very detailed and provided us with sufficient information to map out the whole process of each case. Subsequently, we consulted the published documents on the websites of the local governments and the related higher-level governments to get a deeper understanding of the background and the local conditions and to confirm the key information of each case. The unpublished and published documents that were analysed are listed in [Table 2](#). Finally, we conducted semi-structured interviews with key actors in each case, including the officials of local governments and higher-level governments in charge of the specific innovation (see [Table 3](#)). The interviews with the Haining Municipal Government regarding the city's Market Procurement Trade Policy were conducted between 25 May 2017 and 28 May 2017. The interviews regarding the Industry–Academia Research Collaboration Policy in Xinchang County were conducted on 12 July 2016 in Xinchang and 28 December 2016 in the provincial capital Hangzhou. Each of the interviews lasted around 1 to 1.5 hours. The interview questions mainly included: 1) What was the process of the emergence of the innovation, and what were your considerations in each of the stages? 2) What was the role(s) of the higher-level government in introducing the innovation? 3) What was the role(s) of the local government in the introduction of the innovation? 4) How did the local government interact with the higher-level government?

Case analysis

Case 1: the Market Procurement Trade Policy in Haining City

Haining is a county-level city in the north of Zhejiang Province in Eastern China and benefits from its geographic proximity to economic powerhouses such as Shanghai, Hangzhou and Suzhou. Haining has traditionally been a place for thriving industry with the second sector accounting for the majority of GDP growth. Manufacturing and export-oriented industries, in particular, are the most important sectors and have contributed a large share of Haining's economic growth in the last decades.

Table 2: The analysed documents and their focus

	Document	Focus
Case I	Several Opinions of the General Office of the State Council on Promoting the Growth Stabilisation and Structural Adjustment of Imports and Exports	Initiative of the policy innovation
	The Summary of National Business Affairs Conference hosted by the Ministry of Commerce	Division of tasks for innovation
	The Survey Report of the Ministry of Commerce in Market Procurement Trade Reform	Opinions of the higher-level government
	Haining Market Procurement Trade Reform Report	Process of the innovation adoption
Case II	The Suggestion of Xinchang County Party Committee on the 13th Five-Year Plan	Initiation of the policy innovation
	The Survey Report of the Deputy Director of the Standing Committee of Zhejiang Provincial People's Congress on the Industry–Academia Research Collaboration Work in Xinchang County	Interaction between higher-level authorities
	The Request for Carrying Out the Industry–Academia Research Collaboration Reform in Xinchang County	Content of the innovation and the support that local government requests
	The Approval to Xinchang County of Carrying Out the Industry–Academia Research Collaboration Reform	Feedback of the higher-level authority

Thus, entrepreneurs, businesses, and the local government are naturally interested in easing the export opportunities and processes for companies. The innovation of the market procurement trade policy was aimed at exactly that, namely facilitating easier export business.

The market procurement trade policy is a new way for professional market operators and small and medium-sized buyers to directly engage in export trading. The new policy is aimed at improving foreign trade of ‘multiple types, multiple batches, and small lots’. Through the introduction of a new way of declaring exported goods, businesses engaging in the export of different kinds of goods particularly benefit. Not only does it make their business model more flexible, but also the customs clearance processes become more efficient, quick and convenient. Besides, two substantial bonuses for the local export market are encompassed in the policy programme. For one, a value-added tax exemption is pioneered while there was no such exemption previously which has relieved businesses from some financial burden associated with export business. Second, with the new procurement trade policy, export operations are eased significantly for businesses.

The market procurement trade policy was initially proposed by the Ministry of Commerce, a national-level agency. In other words, the ministry has the copyright of the innovation since it designed the policy innovation and decided where to introduce it. The Ministry of Commerce, jointly with seven other government departments, appointed Yiwu City in Zhejiang Province as the first place to carry out this innovative policy in April 2013. After adopting this innovation, Yiwu’s export market experienced significant growth, which led the Ministry of Commerce to report the positive results to the State Council and then persuaded it to expand the innovation. On 26 July 2013, the Chinese central government published *Several Opinions on Promoting the*

Table 3: The interviewees and their roles

	Interviewee	Role
Case I	The Representative Team of the Ministry of Commerce	The officials of the central government who are in charge of promoting the market procurement trade reform
	The Deputy Mayor of the Haining Government	The local leader who took charge of the market procurement trade reform
	The Deputy Director of the General Office of the Haining Government and the Secretary to the Deputy Mayor of the Haining Government	The coordinator of the market procurement trade reform
	The Director, two Deputy Directors, and four officials of the Commerce Bureau of Haining City	The key implementer of the market procurement trade reform
Case II	The Deputy Head and one member of the General Office of Zhejiang Provincial Party Committee	The coordinators of the industry–academia research collaboration reform in the provincial government
	The Deputy Mayor of the Xinchang Government	The local leader who took charge of the industry–academia research collaboration reform
	The Director, one Deputy Director, and three officials of the Science and Technology Bureau of Xinchang County	The key implementer of the industry–academia research collaboration reform

Growth Stabilisation and Structural Adjustment of Imports and Exports. This document articulated the promotion of the market procurement trade policy based on Yiwu's experience and to extend the scope of the innovative experimentation.

After receiving the approval of the State Council, the Ministry of Commerce soon released the innovative policy by outlining the policy goals, policy instruments and detailed benefits to be expected. Illustrating the latter was of particular importance for the central government as the director of the Foreign Trade Department of the Ministry of Commerce pointed out:

‘In order to better promote this innovation, we need to clearly highlight the benefits of the policy otherwise, local governments may not be willing to apply for it.’

Several local governments expressed their willingness to adopt this innovation, among them especially cities that maintain a big export market such as Wuhu City in Anhui Province, Haining City in Zhejiang Province, Haimen City and Changshu City in Jiangsu Province. Haining City in Zhejiang Province was extremely interested in applying as expressed by the Deputy Mayor of Haining:

‘As a local government, we really want to get this innovative programme. Yiwu has already enjoyed a growing export market after this reform... It is a benefit for us. On the other hand, obtaining a central innovation programme is, no doubt, a kind of performance. We have to try our best to get it.’

In order to get selected for this innovation, the Haining government proactively contacted the Ministry of Commerce to show its enthusiasm for adopting the

innovation and submitted an informative application. In the meantime, the Haining government also started to introduce supportive policies and build adequate infrastructure locally to meet the criteria set by the central government for adopting the market procurement trade policy.

When the applications from local governments were collected, the Ministry of Commerce designated several places as potential sites and conducted surveys of each locality to evaluate their suitability. The assessment of Haining City put forward by the survey group of the Ministry of Commerce explicitly stated that ‘the Haining government attached great importance to the procurement trade and had a good basis to carry out the market procurement trade policy’. On 22 July 2015, the State Council formally appointed Haining City to adopt the market procurement trade policy.

Case II: the industry–academia research collaboration policy in Xinchang County

Xinchang is a county in the eastern part of Zhejiang Province with a long history of industry–academia research collaborations. Located in a mountainous area with limited resources, Xinchang County does not have any natural advantages in promoting socio-economic development. Therefore, at the beginning of the 1990s, the Xinchang government started to explore collaborations with universities and facilitate technology innovation to transform into production, aiming to attract businesses and investment. By leveraging the technology innovation, Xinchang County experienced a great leap in the last three decades: from an underdeveloped county to one of the top 100 most economically successful counties in China. Xinchang also gains its reputation from the ‘Xinchang model of industry–academia research collaboration’ and is appointed by the Ministry of Science and Technology as National-level Innovative County.

The new industry–academia research collaboration policy that the Xinchang government proposed mainly focuses on establishing an industry-oriented policy system of cooperation, aiming at reducing the information asymmetry between enterprises and research groups and inducing higher-level research groups from home and abroad to better serve the needs of the local industry. The innovative policy introduces a new mechanism through which enterprises initiate research programmes and provide part of the funding with matching funding from the provincial and local governments. The research projects are entitled to provincial-level grants which in turn contribute to the promotion of researchers to attract better research teams. Previously, it was the local government that launched research projects with only very limited funding available. Although investigations and surveys of enterprises were conducted before proposing the programmes, it has been difficult to ensure their representativeness. Moreover, the projects also lacked competitiveness, especially for high-level researchers, not only due to the limited financial resources but also because local-level grants have no benefit to their academic careers.²

The Xinchang government understood that in order to conduct the industry–academia research collaboration policy, two kinds of support from the Zhejiang provincial government were needed. First, the research projects under the industry–academia research collaboration policy should be grouped into provincial-level research grants. Therefore, the Xinchang government would like to have authoritative

support from the Zhejiang provincial government since they need to coordinate with the Department of Science and Technology of Zhejiang Province to move beyond the policy of science and technology project management which had not stated that the county-level government could issue provincial-level research grants on behalf of the provincial government. Second, matching funding from the Zhejiang provincial government was needed mainly because it could not be a provincial-level research grant without money from the provincial government. The need for the provincial governments' authorisation was stressed by the director of the Science and Technology Bureau of Xinchang County:

'If we were to introduce this policy, we would face a lot of institutional constraints, so that we need to get permission from the provincial government. It is very important for us, otherwise we cannot carry out this policy... Once we get the permission, we then are able to ask the Department of Science and Technology at the provincial level to include our research projects into the provincial-level research grants list.'

Thus, the Xinchang government drafted the *Request for Carrying Out the Industry–Academia Research Collaboration Reform* and submitted it to the Zhejiang Provincial Party Committee, the top decision-making organ in the province. In the meantime, the Xinchang government also invited the Deputy Director of the Standing Committee of Zhejiang Provincial People's Congress to conduct a survey in Xinchang and requested him to lobby the Zhejiang Provincial Party Committee in their favour. He used to be the Vice-Governor of Zhejiang Province and in charge of science and technology management work, with industry–academia research collaboration being one part of it. This made him a critical actor in this field and the appropriate person to help Xinchang seek support from the provincial government. Since the local government advanced the idea of collaboration and formulated the policy, the higher-level government perceives the local government to be holding the copyright.

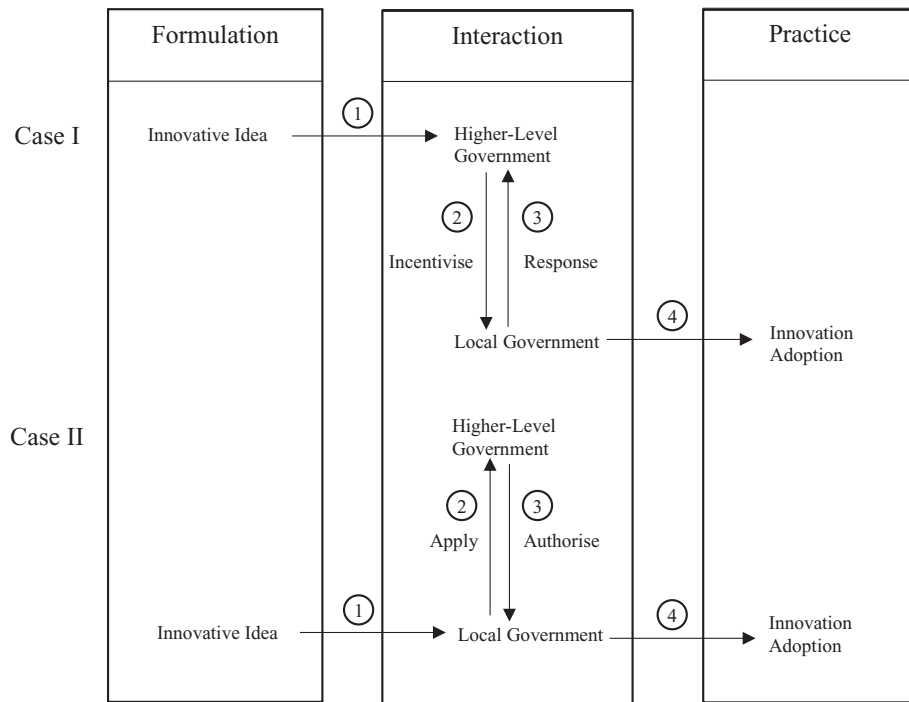
Under the influence of the former vice-governor, the Zhejiang Provincial Party Committee finally approved the Xinchang government's plan to adopt the innovation in June 2016.

Discussion

These cases underscore that the interaction between higher-level governments and local governments in innovation adoption is interactive and dynamic despite the more centralised nature of the authoritarian regime (Liu and Li, 2016; Teets and Noesselt, 2020; Zhu and Zhao, 2021). As illustrated in Figure 2, these two cases highlight two different forms of vertical intervention.

The first case illustrates a situation in which the higher-level government is involved as an active facilitator. The central government initially formulated the innovative policy, and the likely benefits that come with it, such as economic development, provided local governments with a key motivation to apply. When the innovative policy was released, a number of local governments, encouraged by these benefits, competed with each other in order to adopt the innovation. Due to the advantages that come with it, adopting the new policy is seen as a privilege for local governments. By evaluating the policy goals and the local conditions, the higher-level

Figure 2: The processes of the two cases



government finally selected some local governments deemed suitable to initiate the policy innovation. Thus, this process resembles an auction in which the higher-level government announces an innovation to be adopted, and local governments bid openly against one another. The key factors that transform the process into an auction-like contest rather than a mandate from above are the potential benefits for local governments associated with the innovation.

The second case unveils a different strategy of the higher-level government, namely that of backing the local government's proposed innovation. Facing difficulties in introducing it, the local government sought approval and resources from the higher-level government which led to its entry into the policy-formulation process. The higher-level government evaluated the local innovation and authorised the introduction of it. In addition to financial support, the approval by the higher-level government also strengthened the local government's authority in the given domain and lent credible support to its endeavours. In consequence, the local government was able to coordinate with other departments to support the implementation of the policy innovation. Here, compared to the higher-level government in the first case, its involvement in the policy innovation was asked for rather than being predetermined, and the backing of the higher-level government is regarded as a unique form of 'political capital'.

As these cases highlight, how higher-level governments perceive the ownership of the innovative idea greatly shapes their roles in innovation adoption. In Case I, the higher-level government holds the copyright which gives it the power to determine the further process of promoting the innovation. While also having the options of using mandates (Zhu, 2014) like the comparative trials (Zhu and Zhao, 2021), they more

often than not utilise an auction-like process because in an authoritarian country like China, local governments are enthusiastic about adopting innovative programmes from higher-level governments in order to show their loyalty and get more resources. For local governments, the higher-level government's copyright signals that the innovation will likely be successful which in turn benefits localities and their performance, and as a result, they are highly motivated to compete for the privilege of adopting it. This kind of competition differs from the intergovernmental competition in American federalism, although the fundamental target of both is to maximise local interests. For the case of China, competition is triggered by superior authorities, that is, goals precede competition, while the intergovernmental competition under federalism is locally spontaneous (Berry and Baybeck, 2005; Baybeck et al, 2011; Shipan and Volden, 2012), that is, competition precedes goals. Such difference largely determines that the intergovernmental competition in the federal system may result in a 'race to the bottom' regarding goal-setting (Konisky, 2007; Shipan and Volden, 2012). Conversely, in authoritarian systems the intergovernmental competition for innovation adoption privileges may be characterised by improper methods; for instance, exaggerating the basis for the adoption of innovation (for example, Zhang, 2017). When faced with a group of applicants at the local level, higher-level governments in China compare the likelihood of the success of innovation in different places. By holding the copyright and promoting innovation adoption in this way, the higher-level government can ensure that this innovation can be adapted more easily. To some extent, the expectation of the higher-level government in Case I has already become practical by scaling up the innovation from the primary case of Yiwu where it has shown its success for the first time.

When the higher-level government perceives that it is the local government that holds the innovation copyright, the higher-level authority will take a less active role in the adoption process. Besides local initiatives where higher-level government is not involved at all, a considerable number of innovations are not entirely within local governments' discretion (Heilmann, 2008). Case II highlights that the industry-academia collaboration was initially not a priority for the higher-level government, but it recognised that the local government saw it as crucial in supporting the local industry. Nevertheless, local governments are rarely able to advance policy innovations single-handedly, which led the Xinchang government in Case II to request political and financial backing from the higher-level government. The latter can spur innovation adoption at the local level in this case and also avoid the learning externality (Strumpf, 2002), but, at the same time, it is not too closely involved to share the blame in case of an innovation failure (Tsai and Dean, 2014). Once the local government's exploration has proven successful, and its superior also believes that this innovation is worthy of diffusion to other localities for solving similar issues, the higher-level government may take over the innovation copyright by adaptive reconciliation (Zhu and Zhao, 2021). It can then actively facilitate the adoption of innovation in other places, which is also known as 'proceeding from point to surface' (Heilmann, 2008) in the Chinese context.

By examining the impact of the innovation copyright on the role of higher-level government in innovation adoption, this study also highlights that the generators and adopters of the innovation can be separated. This echoes recent findings that policy goals and instruments can be devised independently by different actors (Liu and Li, 2016; Zhu and Zhao, 2021) which moves beyond the presumption of earlier

studies that saw policy goals and instruments generated by the same actors. Differing from their argument that views the nuances of policy innovation from [Bennett's \(1991\)](#) classification of policy goal and policy instrument, our study distinguishes the innovation generator and adopter from the perspective of innovation stages as suggested by previous studies ([Patton et al, 2015](#); [Eggers and Singh, 2009](#); [Hartley et al, 2013](#)). Thus, it adds to the current literature on innovation as policy goals and instruments are often not easily distinguishable in practice.

Conclusion

The research of policy innovation has progressed to the point that a comprehensive and well-integrated framework is both necessary and feasible ([Berry and Berry, 2014](#)). However, beyond coercion, the relevant factors on the vertical dimension and higher-level government involvement, in particular, are still far from being fully captured. Building on prior studies on innovations in authoritarian contexts, this article explained dynamic aspects of the higher-level government involvement in introducing policy innovations in a politically centralised and authoritarian regime.

By highlighting the innovation copyright, that is, the perceived ownership of the innovative idea, this study proposes a theoretical explanation for the different behaviour of higher-level governments in the process of innovation adoption. This is particularly relevant in the context of an authoritarian system where the influence of higher-level governments usually takes precedence. Two cases in China illustrate that the copyright of innovation determines the expectations of the higher-level and local governments which then shape the role of higher-level governments in intervening in innovation adoptions. Although factors other than vertical interaction may also have an impact on innovation adoption, the vertical dimension plays an essential role in both cases because local governments in authoritarian countries like China are upwardly accountable, and the vertical interaction conditions the influence of horizontal pressures ([Zhang and Zhu, 2020](#)).

While this article has incorporated the case of China in general theories of innovation adoption, there are still numerous avenues for moving towards a general framework of policy innovation. First, further research could embed the experience of policy innovation in more countries to explore other possible strategies of the higher-level governments in influencing the adoption of innovation. Second, the assumption that the formulation and adoption of innovation are executed within the same organisation should be relaxed so that the innovative programmes released by international organisations, such as the anti-poverty programmes of the World Bank, can be studied under the theory of policy innovation. Third, this article links the perceived ownership of innovation with the behaviour of higher-level governments in innovation adoption. Further research on policy innovation could explore whether and how the copyright of innovation makes a difference in other stages of innovations such as their reinvention, persistence and institutionalisation. Meanwhile, public administration research may also consider conceptualising and theorising the role of the perceived ownership in other processes and its influence on the expectations of public organisations.

Besides this, this article articulates two practical implications for facilitating policy innovations. The promotion of competition among local governments through incorporating policy bonuses may lead to preferable outcomes compared to mandated

innovations in authoritarian regimes. In addition, an institutional pathway for local governments to seek approval from higher-level governments should be developed there to better activate higher-level governments in encouraging policy innovation.

Notes

¹ New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932)

² In the Chinese context, promotion in academia is generally determined by three factors: publications, research grants from provincial governments and above, and awards.

Funding

This work was supported by the Center of Social Welfare and Governance, Zhejiang University under Grant 20JDZD001, and the National Office for Philosophy and Social Sciences under Grant 20CZZ015.

Acknowledgements

The authors would like to thank two anonymous reviewers as well as the editors for their helpful comments and suggestions. The authors also would like to thank Dr Liang Huang for his valuable assistance during the field work and Professor Yijia Jing and Professor Giovanni Fattore for commenting on previous versions of the manuscript.

Conflict of interest

The authors declare that there is no conflict of interest.

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