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Exploring the effects of unethical pro-organizational behaviour on innovation strategy: an examination based on firm survey in China

Houxue Xia^a, Jhony Choon Yeong Ng^b and Songqiang Wu^a

^aSchool of Economics & Management, Nanjing Tech University, Nanjing, China; ^bBusiness School, Henan University, Kaifeng, China

ABSTRACT

The purpose of this study is to explore whether a firm's unethical pro-organizational behaviour exerts a significant influence on its innovation strategy, particularly when the firm perceives business licencing and permits as an obstacle to its operations. Our study of the Chinese sample finds that unethical pro-organizational behaviour poses a positive effect on product innovation but no robustly significant impact on management innovation, and the obstacle caused by business licencing and permits plays a moderating role and can enhance the relationship between unethical pro-organizational behaviour and product innovation.

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Business ethics; pro-organizational behaviour; innovation strategy; transition economies

Introduction

A stream of researches has claimed that organizational behaviour is an ever more important contributor to a firm's growth. This behaviour can be separated into two typical types at organizational level, including pro-organizational and counter-organizational. We concentrate on unethical pro-organizational behaviour (UPB) based on collective interest due to the fact that UPB has been a key non-market strategy in transition economies and deeply influencing firm's productivity and performance (Umphress, Bingham, and Mitchell 2010). It can be defined as the specific set of 'actions that are intended to promote the effective functioning of the organization or its members and violate core societal values, mores, laws, or standards of proper conduct' (Umphress and Bingham 2011). Recent studies show that UPB and innovation progress may depend on the institutional environment in emerging markets (Dincer 2019), and lack of institutions may drive firms to take UPB to productive activities such as innovation (Xie, Qi, and Zhu 2018).

Though previous studies have provided insight into the factors that influence UPB and identified several important antecedents at the individual (Chen, Chen, and Sheldon 2016), the effects of UPB on innovations remain unclear. One view claims that UPB are regarded as the 'grease' for firm's growth because the acts may lower firm's transaction and operating costs by reducing the procedure and payments that administrative sectors request, such as tariffs and licences (Iriyama, Kishore, and Talukdar 2016). Another view

argues that unethical activities, functioning as payments of bribes (Waldemar 2012), extracts enterprises' development resources from investment in innovation (Anokhin and Schulze 2009).

Our study posits that whether the UPB is viewed as 'sand' or 'grease' for a firm's performance is heavily relied upon contextual factors and innovation strategies. Generally, for innovative activities, a firm in a transition economy has to acquire the business licencing and permits (BLP) from officials (Blackburn and Forgues 2009), and undertaking unethical pro-organizational activities is largely to obtain the key resource such as licences for having market access (Zhu and Zhang 2017). A latest survey conducted by the World Bank has pointed out that 45.8% of Chinese firms expect to give gifts for obtaining the BLP. In this study, we examine the effects of UPB on firms' innovation strategies and explores how BLP affects this linkage in a transition economy, offering theoretical insights in three areas. Firstly, this study extends prior research by addressing the influence of UPB on two typical types of innovations, namely, product innovations and management innovations. Secondly, we provide the odds ratio and marginal effect models to explore how much firms' innovations are expected to increase for a unit in UPB. Thirdly, we create an interaction term to illustrate how the relationship between UPB and innovations changes when the firm considers business licencing and permits as an obstacle to its current operations.

Theory and hypotheses

UPB and firm innovations

According to Umphress, Bingham, and Mitchell (2010), UPB refers to the actions that benefit the organization and includes two main definitional components. First, it is unethical behaviour, or acts that are 'either illegal or morally unacceptable to the larger community'. Second, UPB is pro-organizational behaviour that is carried out to help the organization (Brief and Motowidlo 1986). Until now, several typical theories have explored the factors that influence UPB but still no common opinion. Organizational theory suggests that organizational identification provokes unethical acts that promote organizational effectiveness (Riketta 2005). While transactional theory claims that the type of organization relies upon the characteristics of the transaction. Perceived unethical actions may lead to more perceptions of opportunism and increase the transaction cost of whole society in a particular county (Grossman and Schoenfeldt 2001). Social learning theory focuses on the fact that individuals are likely to follow the example of those whom they trust and respect (Bandura 1978). According to this theory, a leading firm undertakes UPB for shady business deals may lead to other formal firms involved in unethical activities. These theories indicate the influence of unethical actions on organizations from different perspectives and provide the new ways to explain why and how these activities affect organizations, which may extend beyond individual-focused views of unethical behaviour.

Our framework model is shown in Figure 1. We focus on UPB that intends to benefit the organization. According to institutional theory, firms must actively respond to formal and informal institutional requirements to obtain critical resources (Scott 2013). Generally, core resources often distributed by government agencies that may drive firms to adopt

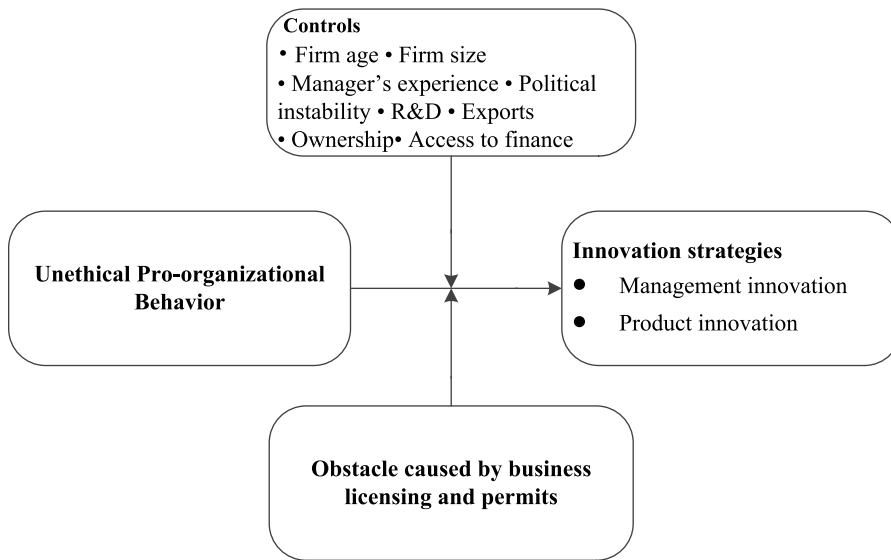


Figure 1. Framework model.

divergent strategies such as UPB to build a connection with officials to reduce the uncertainty of development. Such key resources, including business licencing and permits, certificates granting, government contracts – all of which to a great extent determine the fate of a firm. Data from the Work Bank show that giving gifts for securing government contracts is the most popular way among all the illegal activities in China with 42.2% of firms expecting to this action. UPB has the potential to confer a tactical advantage to the firm over its rivals by helping it bypass capricious bureaucratic processes and provide more incentive to innovation. Firms tend to use the unethically acquired resources for market-oriented innovations such as production innovation (Xie, Qi, and Zhu 2018).

Recent researches have generally identified two typical types of innovations, namely, technological related to new product and non-technological with respect to new administrative or managerial process (Kraus, Pohjola, and Koponen 2012; Khosravi, Newton, and Rezvani 2019). Product innovation is often characterized by highly risky and high returns. These features not only include the uncertainty but also offer a driving force for firms to engage in UPB. In contrast, the management innovation that better adapts to changes in the environment serves the more traditional role of internal resource building (Capron and Chatain 2008). However, management innovation is 'usually a highly complex social system with many different actors and relationships' (Birkinshaw 2006) and its outcomes are uncertain in short run (Slater, Mohr, and Sengupta 2014). Therefore, the resources seized by UPB of firms are more likely to invest into product innovations. That is

H₁: Firms that engage in UPB in a transition economy have a positive relation to their product innovation.

Business licencing and permits

Business licencing and permits (BLP) are prevalent all over the world and offer an instance of how administrative licencing system affects the organization (Portes and Haller 2010). It is necessary to identify the unique role of BLP in the development of Chinese firms. First, Law of the PRC on Administrative Permission requires firms to get the licences from the administrative departments before they bring new products to the market. The decision of distribution of business resources is controlled by officials due to the imperfection of market mechanism (Xu 2011). Second, the inadequate monitor in the licencing process leads to the fact that local government officials play a central position role in allocating market resources with seeking private rather social gain (Yao 2002). Local governments are more likely to act as a grabbing hand than an invisible hand for the market (Huang 2008). Third, the business discrimination (Zhang, Quan, and Jiang 2019), coupled with the high barriers to market entry may lead to the firms to seek a connection with officials by UPB to reap the licences and resources. In this context, firms may conveniently carry out innovative activities and push their innovations into the market.

There is ample reason to believe that BLP functions as a moderator role in the relationship between UPB and innovation. On the one hand, BLP can be considered as a connection point between government agencies and firms. Without BLP, the UPB and the access to innovation resources related to this kind of activities may disappear but the other side of the shield is that the government is unable to supervise the firms, which may lead to some new products that do not tally with the quality standards entering the market.

On the other hand, BLP drives a closer connection between UPB and innovation. Whether firms undertake UPB largely depend upon the uncertainty of development and the desire for innovative activities. According to Iriyama, Kishore, and Talukdar (2016), firms in transition economies often engage in nonmarket activities to reduce uncertainty especially when they face competitive threats from informal sectors while taking legal actions to compete against formal rivals. Hence, firms may enhance the connection with officials via UPB in order to avoid the possible risks. Within the context of an obstacle to its operations caused by BLP, the firm engages in more UPB to conveniently obtain business licences. That is, it provides an external driving force for strengthening the relationship between UPB and innovation. We then hypothesize the following:

H₂: Obstacle caused by business licencing and permits positively moderate the relationship between UPB and innovation.

Research methodology

Sample and data

The World Bank conducts regular surveys of firms across major emerging and transition economies such as China. Our data for this study also comes from the latest survey titled 'China-Enterprise Survey 2012' (CES). Business owners and top managers in 2,848 firms were interviewed from November 2011 through March 2013, and 95.8% of sampled firms are legally registered. Furthermore, these firms in the sample come from 25 megapolis

and belong to 20 subindustries of manufacturing industry in China. The survey collected data on firm-level characteristics such as general information, sales and supplies, the degree of competition, business–government relations, innovation and technology, and so forth. Consistent with prior academic research, we believe that the design of this survey provides us with one of the most comprehensive and the latest firm-level data in Chinese context to explore firms’ unethical pro-organizational activities. After eliminating observations from the sample that had missing data, we collected the final sample consisting of more than 1000 observations for empirical analysis. They come from manufacturing industries including food, refined petroleum product, fabricated metal products, machinery and equipment, etc.

Measures

Dependent variable

Innovation strategy. Lots of research in this field of inquiry use indicators to express different strategies of innovation. Among these literature, production and distribution process have been identified, including product innovation originated from technological and process improvements, and management innovation with respect to organizational amelioration (Mahagaonkar 2010; Nguyen et al. 2016). Consistent with Kraus, Pohjola, and Koponen (2012) and Nguyen et al. (2016), we also separate the two typical types of innovations. One question on the CES that asks top managers what type of innovation activities has this establishment engaged in and offered eight options, as shown in Table 1. We use option (5), that is, the introduction of new products or services, to measure product innovation. For management innovation, according to Khosravi, Newton, and Rezvani (2019), we choose option (3) for reflecting this variable.

Explanatory variable

Unethical pro-organizational behaviour. Quantifying the level of a formal firm’s unethical acts is intrinsically difficult due to an understandable reluctance on the part of the payer to share such information. Previous studies have examined constructs of this behaviour, theft (e.g. Greenberg 2002), organizational misbehavior (e.g. Weitz, Vardi, and Setter 2012) and bribery (Ivancevich, Konopaske, and Matteson. 2005). It is beyond the scope of our study to examine all different types of unethical behaviour. We use data from the questions on the CES to construct the measure for unethical business practices, that is, ‘What percentage of total annual sales do establishments provide informal payments or

Table 1. Types of innovation.

Types of innovation activities	Answers	
	Yes	No
(1) Introduce new technology and equipment(s) for product or process improvements	1	0
(2) Introduce new quality control procedure in production or operations	1	0
(3) Introduce new managerial/administrative processes	1	0
(4) Provide technology training for staff	1	0
(5) Introduce new products or new services	1	0
(6) Add new features to existing products or services	1	0
(7) Take measures to reduce production cost	1	0
(8) Take actions to improve production flexibility	1	0

gifts to officials to “get things done” with regard to customers, taxes, licences, regulations, services, *etc.*?”

Moderating variable

Business licencing and permits. For testing the moderating effect of BLP suggested by hypothesis 2, we use the question item on the CES that asks firms to describe the degree of an obstacle, which is caused by BLP, to the current operations of this establishment. Specifically, we created a dichotomous variable which takes a value of zero if the respondents answered ‘no obstacle’ and one otherwise from the answers.

Control variables

We included several control variables in our empirical analysis following prior research. Firstly, we select the firm-level controls, including firm size, firm age, R&D investments, exports and ownership (Billon and Gillanders 2016). Secondly, we also controlled for a variable – finance as an obstacle – was measured on a 5-point Likert-type scale using the survey question that asked firms to evaluate the extent to which access to finance was an obstacle to the current operations. Thirdly, we controlled for the influence of policy instability on innovation strategies based on the fact that it is regarded as a crucial way to support innovation activities. Fourthly, manager’s experience is often considered as a necessary condition for innovation activities (O’Toole and Tarp 2014). Finally, we included sector and region dummies to control the heterogeneity. Table 2 shows the description and summary statistics.

Results

Given that the surveyed firms in the CES are clustered across sector-region subsamples and most of the answers for survey questions are yes or no, the discrete choice models

Table 2. Description and summary statistics.

Variables	Description
Dependent variables	
Product innovation	Binary indicator for introducing new products
Management innovation	Binary indicator for introducing new managerial/administrative processes
Explanatory variable	
Unethical pro-organizational behavior	Log of one plus the percentage of annual sales paid in gifts in regard to getting things done
Moderating variable	
The obstacle caused by business licencing and permits to current operations	Binary indicator of the perceived obstacle from BLP (‘0’ denotes ‘no obstacle’ and 1 otherwise)
Firm-level controls	
Firm size	Log of the number of annual sales
Firm age	Log of number of years a firm has been in operation
Ownership	Binary indicator for state-owned companies or organizations
Manager’s experience	Number of years of experience working as the top manager
Exports	Log of percentage of a firm’ total sales that are directly exported.
R&D	A dummy variable that indicates whether a firm spent on R&D activities.
Other controls	
Access to finance	Five-point Likert-type scale indicator for the perception of access to finance as an obstacle
Political instability	Five-point Likert-type scale indicator for the perception of political instability as an obstacle

such as logit are the optimal technique to elicit unbiased standard errors. Table 3 shows the results of the econometric analysis. We obtained a positive coefficient between product innovation and UPB at the 1% level of significance. The unethical business acts, however, may not be significantly associated with the management innovation of focal firms because the models in Table 3 do not provide any statistical significance. The coefficient for interaction item is positive and statistically significant in product innovation model, claiming that the higher the perceived operation obstacle caused by BLP, the more likely a firm will be to engage in product innovation. That is, the positive effect of UPB on the likelihood of a firm's innovation is strengthened when the firm views BLP as an obstacle to current operations.

To facilitate interpretation, we have graphed the moderating role of BLP in Figure 2. It illustrates the effect plot for product innovation model in Table 3, which demonstrates a positive moderating effect for observations. Taken as a whole, results from the analyses also provide supports for our hypotheses.

The odds ratio and marginal effect results in Table 4 are to explore how much firms' innovations are expected to increase for a unit in unethical business behaviour. Obviously, the odds ratio results in Table 4 show us that in the case of the given variables, possibility for product innovation in firms engaged in UPB is 84.6% higher than that of those without. Accordingly, the marginal effect models claim that the marginal influence of UPB on product innovation is 0.32, which estimates that the possibility for product innovation will

Table 3. Regression results for types of innovation.

Variables	Product innovation		Management innovation	
	Model <i>a</i>	Model <i>b</i>	Model <i>c</i>	Model <i>d</i>
UPB	0.768*** (0.234)	0.613* (0.370)	0.197 (0.186)	0.228 (0.303)
BLP		-0.642 (0.415)		0.464 (0.361)
C_ UPB × C_ BLP		1.197* (0.629)		-0.601 (0.542)
Firm size	0.151*** (0.045)	0.150*** (0.044)	0.282*** (0.043)	0.284*** (0.043)
Firm age	0.123 (0.137)	0.125 (0.138)	0.262* (0.132)	0.259* (0.132)
Ownership	-1.869*** (0.401)	-1.851*** (0.391)	-1.713*** (0.376)	-1.733*** (0.381)
Export	0.006* (0.003)	0.006* (0.003)	0.001 (0.003)	0.001 (0.003)
R&D	1.658*** (0.151)	1.686*** (0.152)	0.780*** (0.143)	0.761*** (0.144)
Manager's experience	-0.115 (0.020)	-0.015 (0.142)	-0.291** (0.142)	-0.305** (0.144)
Access to finance	-0.011 (0.017)	-0.057 (0.082)	0.020 (0.076)	0.011 (0.077)
Political instability	-0.300** (0.147)	-0.287*** (0.153)	-0.150 (0.129)	-0.176 (0.133)
Constant	-3.699*** (0.772)	-3.765*** (0.774)	-5.213*** (0.739)	-5.189*** (0.737)
Sector/Region dummy	Y	Y	Y	Y
P-value	0.000	0.000	0.000	0.000
Pseudo R ²	0.173	0.176	0.093	0.095
Observations	1088	1088	1088	1088

(1) C_ UPB and C_ BLP are centralization terms designed to prevent the multiple collinearities happening. (2) Robust standard errors in parentheses. (3) ***, ** and *, respectively, denote $p < 0.01$, $p < 0.05$ and $p < 0.1$.

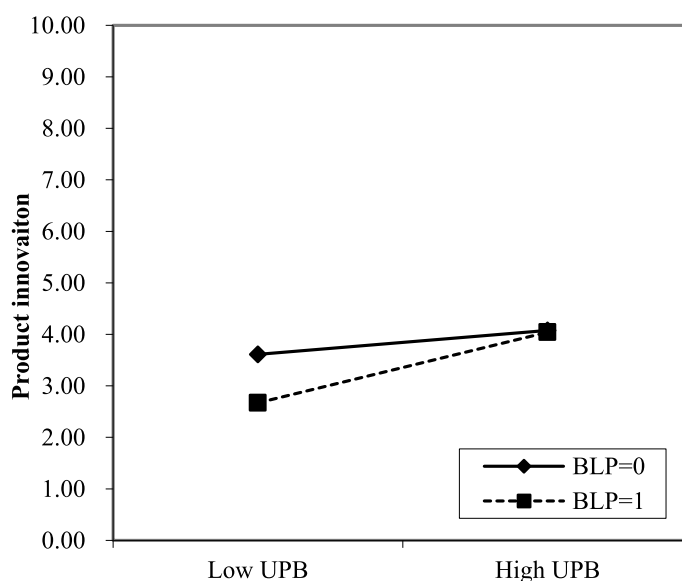


Figure 2. The moderating role of obstacle caused by BLP.

Table 4. The odds ratio and marginal effect results.

Variables	Product innovation		Managerial innovation	
	odds ratio	marginal effect	odds ratio	marginal effect
UPB	1.846*	0.321***	1.256	0.131
	(0.612)	(0.199)	(0.370)	(0.175)
BLP	0.526	−0.337	1.590	0.267
	(0.238)	(0.218)	(0.559)	(0.207)
C_ UPB × C_ BLP	3.310*	0.628*	0.548	−0.345
	(0.556)	(0.332)	(0.285)	(0.311)
Firm size	1.162***	0.079***	1.323***	0.163***
	(0.053)	(0.0232)	(0.059)	(0.025)
Firm age	1.133	0.065	1.295*	0.149*
	(0.157)	(0.072)	(0.173)	(0.076)
Ownership	0.157***	−0.972***	0.177***	−0.996***
	(0.066)	(0.205)	(0.073)	(0.219)
Export	1.006*	0.003*	1.001	0.001
	(0.003)	(0.002)	(0.003)	(0.002)
R&D	5.401***	0.885***	2.141***	0.437***
	(0.822)	(0.084)	(0.303)	(0.083)
Manager's experience	0.985	−0.008	0.737**	−0.175**
	(0.142)	(0.074)	(0.103)	(0.083)
Access to finance	0.944	−0.029	1.010	0.006
	(0.079)	(0.043)	(0.080)	(0.044)
Political instability	0.754**	−0.149*	0.838	−0.101
	(0.104)	(0.080)	(0.109)	(0.076)
Constant	0.023***		0.061***	
	(0.018)		(0.004)	
Sector/Region dummy	Y	Y	Y	Y
P-value	0.000		0.000	
Pseudo R ²	0.176		0.095	

(1) Robust standard errors of odds ratio models in parentheses; Delta-method standard errors of marginal effect models in parentheses. (2) ***, ** and *, respectively, denote $p < 0.01$, $p < 0.05$ and $p < 0.1$.

increase by 0.32% if the firm's UPB changes a unit. Furthermore, the interaction term is statistically significant, which states clearly that BLP poses indeed a moderating impact on the linkage between UPB and product innovation.

Several results for control variables in these models are noteworthy. The coefficients for firm size and R&D are positive and statistically significant in models, which are consistent with recent studies and suggest that the larger firm's scale and R&D investments, the more likely a firm is to carry out innovative activities. Notably, the ownership and obstacle caused by political instability have significant negative influences on innovations, imply that conventional thinking may decrease the innovation passion of state-owned firms, and high level of policy instability may lead to a difficult operating circumstance for firms.

Robustness

We performed two complementary analyses to test the robustness of our main findings. Firstly, we re-examined our models by using a relative measure of product innovation. We explored whether our results hold even when we consider the question 'in the last three years, has this establishment introduced any new products or services?' as the alternative measure for product innovation. Secondly, drawing on Khanagha et al. (2013), we viewed the option (4) in Table 1 as an alternative variable for management innovation to re-examine the two kind of relationships and the moderating role of BLP.

Robustness results for the new measures of innovations shown in Table 5 report that UPB still exerts an influence on product innovation and BLP significantly moderate the relationship between UPB and product innovation. Thus, we can confirm that the main results hold with these alternative measures.

Theoretical contributions and implications

In the first place, it contributes to the increasing scholarly documents on unethical behaviors at the organizational level. One of the questions in this research stream has to do with why some firms engage in unethical behaviors. Compared with the substantial literature, we answer this question by focusing on innovation strategy and the obstacle caused by business licencing and permits. Moreover, our empirical analysis enriches the literature by claiming that unethical pro-organizational behaviour, which benefits and promotes the effective functioning of the organization, may encourage firms to engage in production innovation rather than management innovation. In this respect, UPB can help firms in a transition economy to overcome bureaucratic red tape and stiff administrative processes, thereby enabling them to gain crucial resources for sustaining their innovation strategies.

Secondly, we claimed that BLP moderates the relationship between UPB and product innovations. Our analysis provides evidence supporting this argument, and then further enriching the literature on the strategy management. Finally, this study also extends the institutional literature in a significant way. We examine the indirect effects of BLP on the role of UPB as a facilitator of product innovation in a transition economy, which has recently focused on its institutional system reform with respect to

Table 5. Robustness results.

Variables	Product innovation		Management innovation	
	Model <i>a</i>	Model <i>b</i>	Model <i>c</i>	Model <i>d</i>
UPB	0.913*** (0.276)	0.295 (0.242)	0.191 (0.193)	0.973** (0.475)
BLP		−0.228 (0.533)		−1.077** (0.416)
C_ UPB × C_ BLP		1.946** (0.803)		−0.025 (0.746)
Firm size	0.048 (0.047)	0.053 (0.047)	0.362*** (0.054)	0.357*** (0.052)
Firm age	0.121 (0.153)	0.118 (0.153)	0.349** (0.164)	0.395** (0.166)
Export	−0.006* (0.003)	−0.006* (0.004)	0.001 (0.004)	0.001 (0.003)
R&D	2.339*** (0.163)	2.353*** (0.164)	0.923*** (0.167)	0.914*** (0.174)
Manager's experience	0.050 (0.146)	0.040 (0.093)	−0.539*** (0.194)	−0.594*** (0.203)
Access to finance	0.067 (0.093)	0.048 (0.093)	−0.222*** (0.082)	−0.254*** (0.083)
Political instability	0.318* (0.161)	0.237 (0.165)	−0.018 (0.150)	0.073 (0.162)
Constant	−2.948*** (0.827)	−3.043*** (0.823)	−4.821*** (0.939)	−4.603*** (0.906)
Sector/Region dummy	Y	Y	Y	Y
P-value	0.000	0.000	0.000	0.000
Pseudo R ²	0.264	0.271	0.105	0.111
Observations	1088	1088	1027	1088

(1) Robust standard errors in parentheses. (2) ***, ** and *, respectively, denote $p < 0.01$, $p < 0.05$ and $p < 0.1$.

administrative permission. This conclusion may provide enlightenment for other emerging markets.

Practical implications

Our study helps advance the understanding of how UPB and BLP are tackled for practitioners and policy-makers. Firstly, this study states that obstacle caused by BLP exerts a positive influence on the role of UPB. The main policy approach of a public agency has been for the legislative institution and enforcement bodies to make sure that the cost of getting BLP is smaller than by UPB. Secondly, our findings have implications for administrative examination and approval system reforms in a transition economy. Given that firm-level ethical behaviours are often affected by the economic environments in which they live, and the control of unethical behaviour and its connection with innovation choices present complicated issue to the management of innovation and business–government relations, our results argue that the key to solving the ethical dilemma depends on the administrative examination and approval system reforms. Moreover, these reforms are conducive to building a good ethical climate, cultivating the correct business ethics of enterprises and inspiring innovative vitality of firms. Thus, the government departments should continue to streamline administration and delegate power to the lower levels in order to reduce market access barriers for firms. By doing so can enhance the vitality of firms and expand the autonomy of businesses. And with that, firms may no longer obtain business licencing and permits through unethical ways.

Limitations and future research

This study is not without limitations which may also imply intriguing extensions for future studies. For simplifying our study, we only considered firms in a transition economy. We have to acknowledge that prior studies of innovations often employ the counting measurements and unethical pro-organizational behaviors, however, the measure of them is dichotomous due to the nature of the data. Besides, although our assumption that most firms in the sample are registered and formal is fairly reasonable, our dataset does not allow us to investigate their origin. Future research may consider other forms by using questionnaires, such as individual-level unethical behaviors and competition preferences, to measure UPB more comprehensively.

Conclusions

Given growing unethical behaviour discussions and innovation pressures throughout the world, scholars have begun paying more attention to the mechanism underlying firm behaviours in response to uncertainty. Our study of the Chinese manufacturing industries suggests that there exists a significant linkage between unethical pro-organizational behaviours and innovation strategy, and obstacle caused by business licencing and permits plays a moderating role in this relationship. We also find that a firm's profile, namely, firm scale, ownership and R&D investments significantly affect its innovations, and high level of policy instability may create a bad developing environment for firms.

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Disclosure statement

The authors declare that there is no conflict of interests.

Notes on contributors

Houxue Xia, Ph.D., is an assistant professor at Nanjing Tech University in China, and a visiting scholar of National University of Singapore (2017.09–2018.09). His research focuses on business ethics and innovation management. He has published some articles across these areas, including works in *Journal of Academy of Business and Economics*, *Energy & Environment*, *Sustainability*, *Finance & Trade Economics*, *Science Research Management*, etc.

Jhony Choon Yeong Ng, Ph.D., is an assistant professor of organizational behavior at the Henan University. His research interests include performance management, emotional coping, mentoring relationship, and the dark sides of organizations.

Songqiang Wu, Ph.D., is a professor at Nanjing Tech University in China, and a visiting scholar at the Business School of National University of Singapore. His areas of research include innovation management and leadership. He has published across these areas more than 20 manuscripts including works in *Journal of Intelligent & Fuzzy Systems*, *Studies in Science of Science*, *Foreign*

Economies and Management, etc. He is the recipient of many awards including Jiangsu Province Philosophy and Social Science Outstanding Achievement Award (2012, 2018).

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