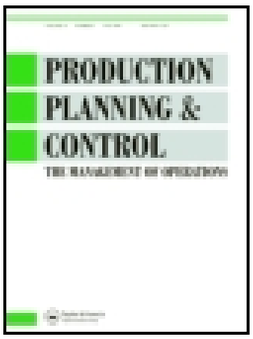

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How do institutional forces affect firm agility through organisational justice? Differences between Chinese and foreign firms in China

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ABSTRACT

While institutional environment is increasingly affecting supply chains, the effects of institutional forces on firm agility remains largely unexplored. This paper integrates institutional theory with the organisational justice and agility literature to explore whether institutional forces (i.e. legal protection, the importance of *guanxi*, and government support) affect agility of local and foreign firms in China through organisational justice. Results from structural equation modelling of survey data from 241 manufacturers in China demonstrate that Chinese firms gained agility through procedural, distributive, and interactional justice created by the three institutional forces. Gaining less justice from all three institutional forces (especially *guanxi*), the agility of foreign firms relied on only distributive justice. Legal protection and *guanxi* worked for Chinese firms, whereas foreign firms are somewhat disadvantaged in this regard and relied mostly on government support to provide distributive justice for building agility.

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Institutional forces; organisational justice; firm agility; firm ownership; China

1. Introduction

Organisational agility is the ability to dynamically react and respond to changes, threats, and opportunities in the environment (Gligor and Holcomb 2012). Today, significant environmental changes and uncertainties come from market competition and political tension that a firm has no full control over, e.g. an international trade dispute between US and China, sanctions, Brexit, and the COVID-19 pandemic (Yu et al. 2019, 2022). The visibility, speed and flexibility required to achieve agility (Gysegom et al. 2019) somehow depend on the institutional environment. Drawing upon institutional theory, few studies have examined how firm performance is affected by institutional forces, e.g. regulatory structures, government support, and social networks (Bai, Sheng, and Li 2016; Cai, Jun, and Yang 2010; Child, Chung, and Davies 2003; North 2005; Shou, Zheng, and Zhu 2016). These studies indicate institutional forces may support firms and protect them from disruptions, but there is a lack of evidence to show how organisational agility is affected by the different institutional forces. Therefore, this study asks: *how do institutional forces affect firm agility*?

Institutional forces can foster a sense of justice and fairness especially important for partners and governments to collaborate during crisis. Lessons from the COVID-19 outbreak tell us trust between firms, supply chain partners and governments are essential to addressing global shortages of key materials and commodities (PwC 2020). Firms trust the institutional environment that protects them with fair legal protections. Regulative institutions (e.g. legal protection) protect firms from unfair competition (e.g. Cai, Jun, and Yang 2010; Hemmert et al. 2016; Sheng, Zhou, and Li 2011). Legal protection provides procedural justice (Luo 2007) because it reduces relational risk through the formalisation and routinisation of institutional frameworks, e.g. legal procedures. It is a fair distribution of outcomes (i.e. distributive justice) that increases forbearance and decreases opportunism (Luo 2007), which fosters trust and willingness to address new threats together. However, these possible mediating roles of justice is less understood.

Another gap in the literature is the lack of knowledge to distinguish different institutional forces faced by local versus foreign firms within the same jurisdiction. The extent to which legal protection and government provide a fair and just institutional environment seems to vary between local and foreign firms. Cai, Jun, and Yang (2010) show legal protection in China did not increase trust among Chinese manufacturing firms (Cai, Jun, and Yang 2010). In South Korea, Hemmert et al. (2016) show legal protection is important for both procedural and distributive justice. While government support and *guanxi* fostered trust in China (Cai, Jun, and Yang 2010), Korean firms rely on legal protection and social networks to build trust via procedural justice and distributive justice (Hemmert et al. 2016). When legal systems are less effective, firms turn to business relationships. So, *will foreign firms operating in China benefit from legal protection and government support in an environment whereby guanxi might*

favour Chinese firms? Answers to this question have significant implications for differentiating agility between Chinese controlled firms and foreign-controlled firms in China (hereinafter 'Chinese' and 'foreign' firms).

The role of *guanxi* in China as informal networks and social bonds in providing justice is another gap in the literature. Informal social networks (commonly associated with informal patronage systems and even nepotism) include *blat* in Russia, *compadre* in Latin America, *guanxi* in China, and *wasta* in the Middle East and North Africa (Luk et al. 2008; Park and Luo 2001). These systems represent beliefs about appropriate personal and social relations and obligations (i.e. expected behaviours within social systems), which are essential for providing flexibility, assistance, and resources when they are needed. As a fundamental informal value within the institutional environment in China, *guanxi* plays a prominent role in trust-building (Cai, Jun, and Yang 2010; Feng et al. 2017; Li, Poppo, and Zhou 2008; Wiegel and Bamford, 2014). A reliance on *guanxi* could mean the roles of the legal system and government support in building trust among Chinese manufacturing firms differ from foreign firms. There are cognitive differences among people working in Chinese and foreign firms in China, which inevitably alter institutional impacts (Lau, Tse, and Zhou 2002). G*uanxi* and government support (but not legal protection) create trust among Chinese firms (Cai, Jun, and Yang 2010). Chinese firms are probably better at using *guanxi* to gain favours from government support (Peng 2003). That means the claim that distrust in institutions fosters entrepreneurship and improves agility (Gölgeci et al. 2019) may not apply to Chinese (as opposed to foreign firms) operating in China, whereby government intervention and *guanxi* are norms.

To address the above gaps, this study examines whether the ways institutional forces (i.e. legal protection, the importance of *guanxi*, and government support) affect firm agility through organisational justice differ between local and foreign-owned firms in China. The study extends the work of Cai, Jun, and Yang (2010), Hemmert et al. (2016) and Griffith, Harvey, and Lusch (2006) who have not linked institutional forces and trust/organisational justice to organisational agility and considered the roles of interactive justice. This extension leads to several contributions. First, we know trust fosters information sharing and collaboration among Chinese firms (Cai, Jun, and Yang 2010), and institutional forces enable trust-building by providing a fair and just environment for forming organisational justice (Hemmert et al. 2016). For building agility, we add interactional justice as important for facilitating information exchange (e.g. Colquitt and Rodell 2011; Liu et al. 2012; Narasimhan, Narayanan, and Srinivasan 2013; Wang, Craighead, and Li 2014). Second, US firms with procedural and distributive justice traits are germane to collaborative, transparent, and relational partnership behaviours required to reduce conflicts and improve relationship satisfaction in the supply chain (Griffith, Harvey, and Lusch 2006), but this may not apply to a foreign firm operating under regular government intervention and *guanxi* in China. We clarify whether the institutional forces–justice–agility linkage differs between Chinese and foreign firms. Thus, these extensions and our new evidence may clarify the mixed multiplicative effects of various justice dimensions on firm performance (Narasimhan, Narayanan, and Srinivasan 2013).

Third, by integrating agility with studies that link institutional theory with organisational justice (e.g. Hemmert et al. 2016), this study explicates and examines the impact of legal protection, government support, and the value of *guanxi* on firm agility through the three dimensions of justice among Chinese and foreign firms in China. Given the different possibilities in the ways factors affect trust, evidence suggests that firm agility is affected by the combination of underdeveloped institutional structure, ineffectual judicial system, and pervasive government interference in economic exchanges (Bai, Sheng, and Li 2016; Shou, Zheng, and Zhu 2016; Zhou et al. 2014); and unique relational ties through *guanxi* (Cai, Jun, and Yang 2010; Hemmert et al. 2016). Our empirical results offer managerial guidelines for managers from Chinese and foreign firms on the types of institutional forces and organisational justice that matter the most for organisational agility.

2. Theory and constructs

2.1. Institutional theory and institutional forces

Institutional theory is traditionally concerned with how organisations better secure their positions and legitimacy by conforming to the rules (such as regulatory structures, laws, governmental agencies, and other societal and cultural practices that exert conformance pressures) and norms of the institutional environment (DiMaggio and Powell 1983; Scott 1987). Previous research has identified various institutional forces. Institutional theory asserts firms are impacted by forces exerted by institutions, including national and local governments, social networks, and other powerful associations (Cai, Jun, and Yang 2010; Lau, Tse, and Zhou 2002; Hemmert et al. 2016). Firms conform to institutional forces to gain rewards, prestige, support, and legitimacy (Scott and Meyer 1983). Economic, social, legal, and political environments shape rules and norms for business activities (Hemmert et al. 2016). Institutional theory provides important insights to the development of supply chain strategies (Kauppi 2013), and prior studies have employed institutional theory to examine the effects of institutional forces on the implementation of supply chain practices (e.g. Cai, Jun, and Yang 2010; Hemmert et al. 2016). In the supply chain context, institutional forces may be formal (e.g. legal protection or political forces) (Cai, Jun, and Yang 2010) or informal (e.g. cultures and norms) (DiMaggio and Powell 1983), which together represent the contexts that influence supply chain activities, operations and logistics of goods and services (Davis and North 1971; Lau, Tse, and Zhou 2002).

Institutional forces are shaped by legal structures (Cai, Jun, and Yang 2010; Hemmert et al. 2016, Scott 1987), political structures (Scott 1987), cultural and educational systems, financial market systems (Lewin, Long, and Carroll 1999), and informal social networks (Cai, Jun, and Yang 2010; Hemmert et al. 2016). Two institutional forces, i.e. legal protection and government support have been shown to influence market

competition and firm performance (Hemmert et al. 2016; Lewin, Long, and Carroll 1999). Informal *guanxi* social networks are deeply ingrained within China's culture, and significantly define the ways of doing business (Cheng, Yip, and Yeung 2012; Park and Luo 2001). *Guanxi* is characterised by interdependence and reciprocity (Su, Sirgy, and Littlefield 2003). Thus, engaging in business in China involves both interpersonal and cooperative relationships, differing from Western perceptions of business relationships, which focus more on impersonal business processes and metrics (Feng et al. 2017; Su, Mitchell, and Sirgy 2007). To study manufacturing firms in China, this study draws on Cai, Jun, and Yang (2010) institutional model, which identified three formal institutional forces (government support, legal protection, and *guanxi*) to reflect the unique institutional environment that shapes trust for developing organisational justice and agility.

Legal protection is defined as the extent to which one's individual and organisational rights are protected by the judicial system (Shou, Zheng, and Zhu 2016). Legal protection is recognised as a key institutional force and refers to formal rules, structures, practices, and cultures that shape attitudes towards the effectiveness of a legal system (Cai, Jun, and Yang 2010). It has been reported that not all Chinese firms receive similar levels of legal protection and that three is a lack of transparency and consistency (Hsu et al. 2005; Luo 2003). Another aspect embedded in China's culture is negotiation and commitment between different parties, which can 'bypass' the strict rules of legal systems. Chinese firms may not rely on rigid legal systems and prefer flexibility in their approach to solving conflicts and creating more flexible and pragmatic opportunities for firms, contrary to the doctrinaire legal paradigm envisioned as the *summum bonum* by Western cultural perspectives (Cai, Jun, and Yang 2010). Instead, foreign firms may find legal protection more opaque and rigid in China, which makes it harder to gain favours or support.

The *guanxi* element of Chinese culture dominates firms' business decisions and behaviours (Luk et al. 2008; Park and Luo 2001), and is hugely embedded within strategic social networks (Lovett, Simmons, and Kali 1999), resulting in partners gaining favours when they face resource scarcity and environmental uncertainty (Su, Mitchell, and Sirgy 2007). *Guanxi* facilitates business operations and influences trust-based relationships (Lovett, Simmons, and Kali 1999). Over the past 30 years, commensurate with economic liberalisation and private sector expansion in China, the influence of *guanxi* has grown exponentially and is central to management decision making, irrespective of the region, or industry type. However, since foreign firms are less sensitive to *guanxi* than Chinese firms, the roles of *guanxi* under environmental uncertainty may vary in terms of ownership structure.

Government support is concerned with the level of economic support and guidance from government departments, such as financial support, upskilling, regulatory and policy requirements, or general business advice (Cai, Jun, and Yang 2010; Xin and Pearce 1996). However, whilst Western countries are bound by stringent and central policies and processes, the Chinese system appears more ad hoc and localised. Local government departments in China have a direct and influential role in decision making, financial support awarded, policy applications and parameters, and land fees (Luk et al. 2008; Thun 2006). Chinese and foreign firms require different types of support. Therefore, rather than being a standardised and formal approach, government support tends to be tailored business-by-business, based on firms' perceived value, industry, size, *guanxi*, and ownership structure.

2.2. Organisational justice

This study operationalises the concept of organisational justice at the level of supply chain relationships, which includes three dimensions: procedural, distributive, and interactional justice (Liu et al. 2012; Luo 2007; Narasimhan, Narayanan, and Srinivasan 2013; Wang, Craighead, and Li 2014).

Procedural justice is defined as 'the degree of fairness with which governance decisions are taken in the exchange relationships' (Narasimhan, Narayanan, and Srinivasan 2013, 237). Procedural justice assesses the level of fairness within decision-making procedures and mechanisms, such as the clarity of the expectations of each party at the outset, engagement within the decision-making process, and how well-defined the process is. Combined, these signify the level of bias suppression, correctability, consistency of decisions, and the level of ethical expectation and observance within the decision-making process (Colquitt and Rodell 2011; Kim and Mauborgne 1998; Luo 2007). When such traits and procedures are present within the decision-making process, it creates a collaborative and positive business environment, resulting in increased levels of coordination, sharing of knowledge, and efficiencies in processes and routines (Luo 2008; Wang, Craighead, and Li 2014).

Interactional justice represents the interpersonal aspect of information exchange and focuses on fairness perceptions regarding interpersonal treatment and open communication among business partners during human interactions (Luo 2007). We define *interactional justice* as 'the degree of openness shown by the transacting parties in communicating relationship relevant information and in managing conflicts' (Narasimhan, Narayanan, and Srinivasan 2013, 237). When mutual openness exists between partners, relationships become more trust-based, with increased levels of integrity, respect, and togetherness exhibited (Liu et al. 2012; Narasimhan, Narayanan, and Srinivasan 2013). Such behaviours are shown to foster communication and subsequently reduce buyer/supplier opportunism (Huo, Wang, and Tian 2016).

Distributive justice is drawn from equity theory, which posits that contributions, rewards, and outcomes between trading partners should be equally distributed (i.e. equity in the allocation of effort and reward) (Adams 1965). Following Narasimhan, Narayanan, and Srinivasan (2013, 237) work, we define distributive justice as 'the fairness of rewards in the relationship based on the effort expended'. Distributive justice promotes trust and thus reduces the possibility of opportunistic behaviour between partners (Luo 2007). If the

distribution of rewards, the ratio of outcomes to inputs is favourable, and the level of partnership commitment increases, irrespective of the level of competitiveness and uncertainty in the environment (Narasimhan, Narayanan, and Srinivasan 2013; Walker and Pettigrew 1984).

2.3. Firm agility

Firm agility is defined as a firm's capacity to respond to sudden changes within its operating environment, which may comprise opportunities or threats (Gligor and Holcomb 2012). Agile firms deal quickly with unexpected change and are more equipped to transform changes and instability into opportunities (Sharifi and Zhang 1999). An agile firm adapts and adjusts its operations and external operations by adjusting supply chain operations in response to business disruptions within the business environment (Tse et al. 2016). While the literature agrees firm agility is achieved through internal capabilities (Gligor and Holcomb 2012; Gligor, Holcomb, and Feizabadi 2016), it also depends on inter-organisational relationships and institutional environments (Gölgeci et al. 2019), which may be unstable at times, and particularly useful for providing protection and support during adverse periods.

3. Theoretical framework and hypotheses

Past studies show certain institutional forces foster trust in a supply chain (Cai, Jun, and Yang 2010), and this process occurs through building organisational justice (Hemmert et al. 2016), which is focal for building long-term trustworthy supply chain relationships (Griffith, Harvey, and Lusch 2006). These are the ingredients for building firm agility. Because institutional forces shape how relationships are managed, and how firms are protected by the juridical system and receive support from the government, they may affect justice in a supply chain (Cai, Jun, and Yang 2010; Hemmert et al. 2016) and firm agility. How institutional forces can shape a trustworthy, fair, and just business environment (organisational justice) in China varies between Chinese and foreign firms (Cai, Jun, and Yang 2010; Hemmert et al. 2016). To advance theoretical understanding, we integrate institutional theory (focus on institutional forces), organisational justice, and agility literature into a conceptual framework (see Figure 1). The framework explains the impacts of institutional forces (i.e. legal protection, the importance of *guanxi*, and government support) on firm agility, mediated by organisational justice (i.e. procedural, interactive, and distributive justice). In the framework, institutional forces represent the institutional environment; organisational justice reflects a supply-chain level construct, while firm agility is a firm-level capability.

3.1. Effect of institutional forces on organisational justice

Drawing upon institutional theory, we argue that being protected by a transparent and fair legal system, with clear rules, forms procedural justice among manufacturers in China. Legal protection systems increase the perception of fairness of legal mechanisms (Hemmert et al. 2016). Well-defined rules lead to an increase in confidence and trust and reduce transactional uncertainty among firms (Hemmert et al. 2016; Shou, Zheng, and Zhu 2016). Fair legal processes facilitated by clear legal procedures can help in providing voice, input, correctability, and equity among trading partners (Colquitt and Rodell 2011; Folger and Konovsky 1989). By making transparent and open communication safe, legal protection systems promote interactional justice.

Fear of opportunistic behaviours limits open communication and investment in partnerships, while clear legal systems provide a safe environment for collaboration and information exchange between business partners (Luo 2007). Firms rely on trustworthy legal frameworks to collaborate and trust each other. Exposure to opportunistic behaviour is limited by clear legal structures that allow punishment of partners who violate contracts (Hemmert et al. 2016). Knowing that the

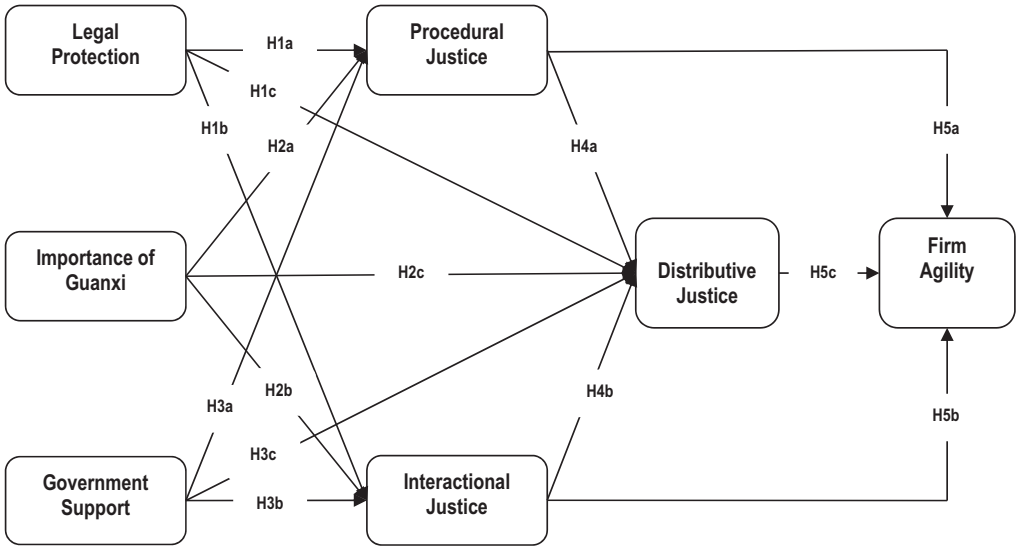

Figure 1. Proposed conceptual model across Chinese and foreign firms.

legal systems discourage opportunistic behaviour, firms are willing to use a more just distribution of rewards and risks. Rewards can motivate sharing of risk in a supply chain (Tse, Zhang, and Jia 2018). Strong legal systems can enhance distributive justice by protecting the rights of all parties, but unequal distribution of risks caused by inconsistent legal systems can generate mistrust among parties (Cai, Jun, and Yang 2010). This perception of justice is made transparent by clear legal procedures, as well as the chance of retribution if the law is violated, which helps to enhance the fair distribution of benefits and equitable allocation of resources between partners (Hemmert et al. 2016). Partners commit to one another if they perceive a fair distribution system supported by clear legal mechanisms.

While the above arguments are relevant to Chinese firms, we expect foreign firms to feel less fairness from legal protection in China. When dealing with market uncertainty, Chinese firms may utilise their embedded relationships to extract government support (Peng 2003). Foreign firms often lobby a country's government to reform markets, but this is not the norm in China. As China's economy is still considered transitional (Froese et al. 2019), stricter rules and regulations are in place for foreign firms entering the market (Peng 2003). Thus, Chinese firms may be subject to less stringent legalities. Moreover, the transitional nature of the Chinese economy is characterised by a lack of market-supporting institutions and an evolving regulatory system, making it difficult for foreign firms to perform usually simple tasks (e.g. gaining permits or product approvals) (Froese et al. 2019). China's local governments have a history of favouring domestic firms through industrial policies and government interventions, while the regulatory system lacks transparency. This institutional milieu puts foreign firms at a disadvantage (Tan 2002; Froese et al. 2019), so they might feel less justice from the institutions in China.

H1: *Legal protection has a significant positive impact on (a) procedural justice, (b) interactional justice, and (c) distributive justice for Chinese firms, and these relationships will be less pronounced for foreign firms in China.*

The importance of *guanxi* refers to how critical interpersonal and inter-organisational relationships are for preferential treatment and exchange for favours (Cai, Jun, and Yang 2010; Luk et al. 2008; Park and Luo 2001). Each industry will have its unique networks of guanxi that affect how exchanges are made. Thus, we consider guanxi at an industry level. In China, *guanxi* is an accepted and expected norm; it defines a clear and fair procedure for managing business relationships (Luo 2008; Wang, Craighead, and Li 2014). Thus, the importance of *guanxi* forms the basis for procedural justice. Regarding interactional justice, *guanxi* is seen as a source of social capital that assists organisations to enable interaction and relationships built on trust (Feng et al. 2017; Li et al. 2017; Wiegel and Bamford, 2014). Through social interactions following the *guanxi* structure, information sharing, and quality is ascertained, leading to fairness perceptions (Chavez et al. 2015). Close *guanxi*-embedded relationships encourage customer and supplier collaboration, integration of processes, open communication, and mutual problem-solving (Chavez et al. 2015; Hemmert et al. 2016). In *guanxi* networks trust is the fundamental driver that defines informal rules and continuous interaction between parties (Cai, Jun, and Yang 2010). This high level of trust, coupled with openness, enhances the level of cooperative relationships (Feng et al. 2017; Luo, Huang, and Wang 2012). A fair distribution of rewards and outcomes for parties inside *guanxi* networks is required to maintain trust (Luo 2007).

While *guanxi* is a norm among Chinese firms, foreign firms in China that rely more on formal business relationships (rather than interpersonal relationships) might find it harder to gain justice from the *guanxi* network embedded in their supply chains. While foreign firms may understand the importance of *guanxi* for business transactions as an abstract concept, it is more fully imbued in Chinese national culture and the daily realities of Chinese firms, which may render foreign firms at a disadvantage (Park and Luo 2001). Moreover, if partners fail to reciprocate such behaviours in the relationship, this may result in negative implications for firms' reputations. Park and Luo (2001, 460) state that 'in the absence of clear property rights, the extent of *guanxi* often affects decision making of government officials, who thus exercise personal preferences in lieu of strict legal interpretations of the rules'. This implies that Chinese firms may have different experiences from their foreign counterparts. The ties gained and utilised through *guanxi* may, at times, hinder organisational decisions, which could potentially increase profits, yet they are recognised as being invaluable in times of environmental uncertainty, and could potentially aid in firm agility. Foreign firms must engage in complex bureaucratic relations with national and local governments to establishing a functioning *guanxi* with government officials (which might give them an advantage in the government/regulatory dimension) and thus offset their disadvantage with domestic firms (Humphreys et al. 2011). However, there is presumably extensive legislation and relationships to preferentially support local firms, so *guanxi* would probably offer less advantage to foreign firms as opposed to local firms.

H2: *The importance of guanxi has a significant positive impact on (a) procedural justice, (b) interactional justice, and (c) distributive justice for Chinese firms, and these relationships will be less pronounced for foreign firms in China.*

Government support has been recognised as an institutional force that affects firms' decision making and competitiveness (Hemmert et al. 2016). In China, the lack of a consistent legal system encourages firms to look for government support, which can offer legal advice and resolve possible conflicts between firms (Cai, Jun, and Yang 2010). In doing so, government support provides a non-legal protection mechanism to complement formal legal procedures, thereby helping increase trust and confidence between business partners. Thus, government support encourages procedural justice. Government support can induce cooperative relationships since firms feel more confident that in the event of possible disputes with business partners the government will play a protective role. Government support

increases legitimacy in firms (DiMaggio and Powell 1983), thus potential customers may be more interested in long-lasting relationships. Furthermore, government support (often financial) can strengthen firms and their competitiveness, which makes them more attractive to do business with (Hemmert et al. 2016). Thus, government support can increase interactional justice.

Regarding distributive justice, government support affects firms' decisions to aid their suppliers, and thus increases the sense of fairness and trust between supply chain stakeholders (Cai, Jun, and Yang 2010; Hemmert et al. 2016). Government support has been shown to motivate fair treatment and commitment to encourage cooperative relationship behaviour between business partners among Korean firms (Hemmert 2012). However, government support for Chinese and foreign firms in China may vary. For example, Chinese firms may receive funding directly for innovation and operational improvement, while foreign firms mainly get benefits through taxation policies. After joining the WTO, the Chinese government has established fairer trade procedures and provided various taxation levies to foreign firms, which may lead to a perception of procedural and distributive justice. Equally important, both foreign and Chinese firms must be treated fairly to enable a fair and open competitive environment, meaning the effects of government support may vary but their differences are hard to theorise.

H3: *Government support has a significant positive impact on (a) procedural justice, (b) interactional justice, and (c) distributive justice, and these relationships vary between Chinese and foreign firms in China.*

3.2. Relationships between justice dimensions

When partner firms perceive their relationship and outcomes to be equitable (distributive justice), they develop a long-term orientation towards their business relationships. This is in part derived from how the parties perceive the development of consistent and clear rules and procedures (Ganesan 1994). When firms perceive that their supply chain partners provide clear explanations and a reliable administration system, they perceive trust, and thus show more willingness to continue and commit to the relationship (Griffith, Harvey, and Lusch 2006). Interactional justice improves the personal relationship and information sharing (Luo 2007), which creates a favourable social environment that helps promote trust and a sense of fairness, thus reducing the possibility of opportunistic behaviour and uncertainty in the business relationship (Liu et al. 2012). A just and open communication process encourages the willingness to move beyond self-interest to the common interest of all involved stakeholders (Cropanzano, Bowen, and Gilliland 2007).

While procedural and interactional justice can positively influence distributive justice in general, our earlier arguments suggest foreign firms do not get as much justice as their Chinese counterparts. Since Chinese firms are more familiar with the institutional environment in China and they are given more favours to exploit the institutional environment that fosters justice, we expect the effects of procedural and interactive justice to be less pronounced for foreign firms.

H4: *(a) Procedural justice and (b) interactional justice have a significant positive impact on distributive justice for Chinese firms, and these relationships will be less pronounced for foreign firms in China.*

3.3. Effects of organisational justice types on firm agility

Firm agility requires fast adaptation, reduced levels of conflicts, improved collaboration, information exchange, effective use of resources, and high levels of trust (Narayanan, Narasimhan, and Schoenherr 2015). Firm agility relies on an increase in supply chain visibility, responsiveness, and flexibility. Information sharing can increase visibility, but it is more effective in a fair and just supply chain with clear rules (procedural justice) that promote open and honest communication (interactive justice). Suppliers may put in extra efforts and even take on risks to provide quicker response and additional flexibility, only when they foresee fair distribution of risks and rewards. Through such justice in a supply chain, buyers and suppliers can respond more quickly to customer needs (Tse et al. 2016). Justice fosters a mutual understanding and the involvement of management to facilitate resource allocation for meeting common objectives (Narayanan, Narasimhan, and Schoenherr 2015). Similarly, information sharing is vital for speeding up new product development, variation, and introduction (Gligor, Holcomb, and Feizabadi 2016; Petersen, Handfield, and Ragatz 2005). Trust is formed in a just and fair environment, which facilitates interactive justice to promote collaboration and joint allocation of resources to achieve superior performance (Lewis and Weigert 1985).

Firm agility requires collaboration and information exchange (Narayanan, Narasimhan, and Schoenherr 2015). Procedural justice clarifies the processes for collaboration between buyers and suppliers to achieve superior performance (Narasimhan, Narayanan, and Srinivasan 2013). Procedural justice promotes a just and fair process (Cropanzano, Bowen, and Gilliland 2007), and so stimulates an environment for collaboration, integration, and learning (Luo 2008; Wang, Craighead, and Li 2014). With procedural justice, there will be less uncertainty on how to interact, exchange information and to remain flexible to changing environments. Interactional justice is key to any supply chain relationship (Narasimhan, Narayanan, and Srinivasan 2013). It includes relational aspects such as information and knowledge sharing (Luo 2007). Interactional justice supports collaboration in supply chains (Liu et al. 2012; Narasimhan, Narayanan, and Srinivasan 2013). Conversely, a lack of interactional justice can produce a poor perception of fairness, which can give rise to conflicts and the reduction of information flow (Luo 2007).

With distributive justice, buyers and suppliers enjoy a fair distribution of benefits and risks (Narasimhan, Narayanan, and Srinivasan 2013). Furthermore, distributive justice promotes trust and thus reduces the possibility of opportunistic

behaviour between partners (Luo 2007). In contrast, a lack of distributive justice can lead to opportunistic behaviour and poor delivery performance to customers (Narasimhan, Narayanan, and Srinivasan 2013). Thus, a firm's agility requires high levels of trust and fairness (Narayanan, Narasimhan, and Schoenherr 2015). However, the effectiveness of procedural justice, interactional justice, and distributive justice to enable firms to enhance agility is more pronounced among Chinese firms, who are more familiar with and capable of utilising supply chain relationships in China than foreign firms do. As argued earlier, we, therefore, propose the following hypothesis.

H5: *(a) Procedural justice, (b) interactional justice, and (c) distributive justice have a significant positive effect on firm agility for Chinese firms, and these relationships will be less pronounced for foreign firms in China.*

4. Methodology

4.1. Data collection

The survey data was gathered from the Chinese manufacturing industry by drawing 1000 random samples from the government directories provided by the Provincial Economic and Information Technology Commission (PEITC). The survey questionnaires were issued to 890 firms that agreed to participate in the study. Following previous empirical research collecting survey data in China (e.g. Zhao et al. 2011), several approaches were used in this study to improve the response rate. First, before sending out the questionnaires we contacted the chosen companies by email or telephone to solicit their preliminary agreement to participate in this study. Second, we included a personalised cover letter that outlined the main purpose of this study along with clear instructions for filling in the questionnaire and guarantees of confidentiality and anonymity of participants. Third, we sent several reminders via email or telephone call to all respondents to complete the questionnaire. Following research protocol, whereby reminders were forwarded, 257 questionnaires were returned, of which 16 were incomplete and were consequently excluded from the sample. Therefore, 241 (27.08%) of returned questionnaires were suitable for inclusion in the study. The key demographics of the responding firms, such as the distribution of respondents' industry type, location, and size are presented in Table 1, which instils confidence in the survey findings. Also, as shown in Table 1, the participating informants emanate from a variety of backgrounds; most of the informants held high-level managerial positions and had more than five years of managerial experience. This provides confidence that the key informants in this study had the correct level of experience and knowledge of the industry and area under study to provide valid and reliable responses.

4.2. Measures and controls

We first conducted a pilot test with key informants from both academia and industry, to ensure the questionnaire was reliable and valid. Therefore, the questionnaire was assessed by four senior academics and senior managers from four manufacturing firms. Minor adaptations were made to language and scaling, which provided increased confidence that the survey possessed a high level of content validity. The measurement items adopted in this study are reported in Table 2. We measured all the items using a Likert scale from negative to positive (1–7; where 1 = 'strongly disagree' and 7 = 'strongly agree').

We adapted the measures of *legal protection* from Child, Chung, and Davies (2003) and Cai, Jun, and Yang (2010), which captured the degree of Chinese legal protections for firms, such as protecting firms' interests, preventing them from being cheated, and ensuring payment from customers. Measures of the *importance of guanxi* were also adapted from these studies, capturing the degree to which *guanxi* is considered critically instrumental in firm success. The measures of *government support* were guided by the work of Cai, Jun, and Yang (2010) and Sheng, Zhou, and Li (2011) work, which included various types of support from the

Table 1. Sample profiles.

	Percent (%)		Percent (%)
Industries		Firm location	
Automobile	30.7	Pearl River Delta	8.7
Chemicals and petrochemicals	10.4	Yangtze River Delta	8.7
Electronics and electrical	12.4	Bohai Sea Economic Area	20.7
Fabricated metal product	6.2	Northeast China	1.7
Food, beverage and alcohol	13.7	Central China	14.9
Rubber and plastics	2.5	Southwest China	38.6
Textiles and apparel	4.6	Northwest China	6.6
Others	19.5		
Number of employees		Job titles	
1–100	19.1	President/Chief executive officer (CEO)	5.4
101–200	15.4	Vice President	7.1
201–500	13.3	Director	4.6
501–1000	8.7	Manager	49.4
1001−3000	17.8	Other senior executive	33.6
> 3000	25.7		
Firm ownership		Tenure of respondents (in years)	
State-owned manufacturer	30.7	≤ 5	45.2
Private Chinese manufacturer	45.2	6–10	24.5
Wholly foreign-owned manufacturer	10.4	> 10	30.3
Joint venture manufacturer	13.7		

Table 2. CFA results of measurement model.

Constructs and measurements	Factor loadings	α	CR	AVE	CITC range
1. Legal protection		0.905	0.909	0.769	0.764–0.858
The legal system protects our interests	0.877				
The legal system prevents us from being cheated	0.937				
The legal system ensures customers' payment	0.812				
2. Importance of guanxi		0.926	0.927	0.810	0.826–0.882
Business in the industry depends on quality of guanxi	0.888				
Guanxi is still very important in the industry	0.945				
Guanxi is a requirement for success	0.865				
3. Government support		0.879	0.889	0.672	0.591–0.827
In the past 3 years, the government and its bureaus have provided needed information to our company	0.863				
In the past 3 years, the government and its bureaus have provided financial support to our company	0.868				
In the past 3 years, the government and its bureaus have helped our company obtain needed resources	0.888				
In the past 3 years, the government and its bureaus have helped firms obtain licences for import of technology, manufacturing and raw material, and other equipment	0.632				
4. Procedural justice		0.889	0.893	0.676	0.688–0.802
Our supply chain partners do not discriminate but treats us impartially	0.842				
Our supply chain partners have used consistent policies and decision-making procedures in the relationship	0.870				
Our supply chain partners always take into account our concern and feedback in their policies and programs	0.834				
Our supply chain partners know well the situations we face and explains to us their supply chain-related decisions	0.737				
5. Interactional justice		0.889	0.895	0.742	0.695–0.842
The representatives from our supply chain partners respect each other	0.926				
The representatives from our supply chain partners are friendly to each other	0.909				
The representatives from our supply chain partners interact with and treat the other side's managers or staff fairly	0.736				
6. Distributive justice		0.907	0.909	0.667	0.696–0.820
Our gain is consistent with the amount of the effort and investment we have made	0.860				
Our gain is commensurate with the role and responsibilities we have actually taken	0.895				
Our gain relative to our contribution from the relationship is about the same as that for other firms in similar relations	0.842				
Our gain relative to our contribution from this relationship is about the same as that for our supply chain partners	0.752				
Our gain is proportionate to our performance in all joint activities undertaken by our supply chain partners	0.721				
7. Firm agility		0.915	0.916	0.647	0.685–0.841
Our firm can promptly identify opportunities in its environment	0.724				
My company can make resolute decisions to deal with changes in its environment	0.809				
We can make definite decisions to address opportunities in our environment	0.845				
My organisation can make firm decisions to respond to threats in its environment	0.888				
My firm can quickly respond to changes in the business environment	0.805				
When needed, we can adjust our supply chain operations to the extent necessary to execute our decisions	0.743				
Model fit statistics: $\chi^2 = 777.722$; $df = 329$; $\chi^2/df = 2.364$; RMSEA = 0.075; CFI = 0.915; IFI = 0.916; SRMR = 0.056					

government and its bureaus, such as financial aid, market information, and valuable licences. The *organisational justice* scale was informed by Liu et al. (2012), with questions assessing a firm's *procedural justice* that address the level of fairness in a variety of decision-making procedures deemed prevalent in inter-organisational, partnership, exchange, and successful joint decision-making relationships; *interactional justice* reflecting the fairness of interpersonal and interactional treatment between two transacting parties; and *distributive justice* to capture the fairness of effort versus reward, mitigated by the level of responsibility within the relationship (Luo 2007; Narasimhan, Narayanan, and Srinivasan 2013). We adapted Gligor, Holcomb, and Feizabadi (2016) scale to measure *firm agility*, which included addressing opportunities and measuring adeptness to react and adjust to opportunities and threats within the operating environment and have the ability to quickly reconfigure and adjust supply chain operations in line with management decision making.

We chose two common control variables that are typically used in similar studies in this domain that are appropriate for this study, namely *industry type* and

organisational size. Industry type may result in the development of differing justice outcomes and have a direct impact on agility. Firm size (measured by the number of employees) was the second control variable included, as it was felt that firms that have a greater number of employees may have the resources to implement higher levels of justice than smaller firms. Table 1 indicates a wide variety of manufacturing industries, which are characterised by dummy variables for industry type.

4.3. Bias evaluation

A common test adopted by researchers to test for non-response bias is early and late respondents. This study adopted this method and utilised two key characteristics (i.e. annual sales and number of employees) (Hair et al. 2010). The *t*-test results indicate no significant statistical difference among the categorical groups, which indicates that non-response bias is not a concern in this study. Previous research has suggested different approaches to check for non-response bias. For example, comparing non-responders to responders (Hair et al. 2010). However, in this study, we were unable to obtain enough data from non-respondents (e.g. annual sales and number of employees), so we cannot make a comparison with respondents. This is one of the general limitations attributed to survey research.

We employed two methods to evaluate the possibility of common method variance. First, confirmatory factor analysis (CFA) was applied to Harman's single-factor model, which returned a model with an unacceptable level of fit of χ^2/df (3057.886/350) = 8.737, Comparative Fit Index (CFI) = 0.489, Incremental Fit Index (IFI) = 0.492, Root Mean Square Error of Approximation (RMSEA) = 0.180 and Standardised Root Mean Square Residual (SRMR) = 0.126 (Hu and Bentler 1999). Secondly, two measurement models were tested, and comparisons were calculated: the first model was a base model that just included the traits, whilst the second model comprised both the traits and a method factor (Paulraj, Lado, and Chen 2008; Podsakoff, MacKenzie, and Podsakoff 2012). The findings were that the addition of the method factor had a limited value-added impact on the model fit indices (ΔCFI = 0.020 and ΔIFI = 0.020). The results also demonstrated that whilst an inclusion factor was included in model 2, this had only a minor and insignificant impact on the coefficients of the paths, suggesting that the model was robust; therefore, common method variance bias does not appear to be an issue in this study (Paulraj, Lado, and Chen 2008).

4.4. Measurement evaluation

To test the unidimensionality of the theoretical constructs, CFA was conducted. The results reported in Table 2 indicate that the CFI values and IFI values were both in excess of the 0.90 threshold, χ^2/df was less than 3, RMSEA was below 0.08, and SRMR was less than 0.10, which suggests the model tested has a good fit (Hair et al. 2010; Hu and Bentler 1999). The results provide further evidence to support unidimensionality. As shown in Table 2, Cronbach's alpha measures and composite reliability (CR) measures were above the 0.70 threshold (Hair et al. 2010), at 0.879–0.926, and 0.889–0.927, respectively. The corrected item-total correlations (CITC) test was conducted as a final reliability test, indicating values above the 0.30 threshold (Kerlinger 1986).

The CFA results provide evidence of convergent validity (Table 2) due to the reasonable fit between the dataset and CFA measurement model (Hu and Bentler 1999). Furthermore, the factor loading of each item was above the 0.70 threshold (with the exception of one outlier which fell slightly short at 0.63). The average variance extracted (AVE) values of each theoretical construct exceeded the recommended threshold of 0.50 (Fornell and Larcker 1981). Therefore, we have confidence that the constructs under study have convergent validity. Results reported in Table 3 indicate that the square root of the AVE of each theoretical construct was greater than the correlation between any pair, which confirms sufficient discriminant validity (Fornell and Larcker 1981).

5. Data analysis and results

5.1. Structural models and multi-group analysis

We used structural equation modelling (SEM) with AMOS 25 to test the hypotheses. In addition to the whole sample, we also used a multi-group analysis to tease out differences between Chinese and foreign-controlled firms (Cao and Zhang 2011; Wong, Boon-Itt, and Wong 2011). As shown in Table 4, the structural model (whole sample) has good fit ($\chi^2/df = 2.192$, CFI = 0.901, IFI = 0.903, RMSEA = 0.070, and SRMR = 0.077) (Hu and Bentler 1999). Although firm size ($\beta = 0.002$, *n.s.*) was measured as a control variable in the statistical model, the result demonstrated that it has a non-significant impact on firm agility. Only Industry1 (automobile industry) ($\beta = 0.197$, $p \leq 0.001$) and Industry2 (food, beverage and alcohol industry) ($\beta = 0.105$, $p \leq 0.10$) had significant impacts on firm agility.

Table 3. Correlation matrix.

	Mean	S.D.	LP	IOG	GS	PJ	IJ	DJ	FA
Legal protection (LP)	5.421	1.036	0.877[a]						
Importance of guanxi (IOG)	4.642	1.381	0.161*	0.900					
Government support (GS)	4.517	1.228	0.336**	0.223**	0.819				
Procedural justice (PJ)	4.704	1.011	0.417**	0.279**	0.360**	0.822			
Interactional justice (IJ)	5.369	0.964	0.385**	0.242**	0.255**	0.512**	0.861		
Distributive justice (DJ)	4.838	1.011	0.394**	0.308**	0.350**	0.632**	0.656**	0.817	
Firm agility (FA)	5.149	0.972	0.536**	0.171**	0.397**	0.497**	0.553**	0.605**	0.804

Note. [a]Square root of AVE is on the diagonal; $^{**}p < 0.01$.

Table 4. Results of SEM (whole sample).

Structural paths	Standardised coefficient	*t*-Values
Legal protection → Procedural justice	0.337***	4.954
Legal protection → Interactional justice	0.356***	5.137
Legal protection → Distributive justice	0.046	0.740
Importance of guanxi → Procedural justice	0.200**	3.169
Importance of guanxi → Interactional justice	0.185**	2.869
Importance of guanxi → Distributive justice	0.032	0.596
Government support → Procedural justice	0.236***	3.451
Government support → Interactional justice	0.091	1.319
Government support → Distributive justice	0.061	1.078
Procedural justice → Distributive justice	0.431***	6.521
Interactional justice → Distributive justice	0.457***	7.566
Procedural justice → Firm agility	0.117	1.589
Interactional justice → Firm agility	0.242***	3.245
Distributive justice → Firm agility	0.404***	4.175
Control variables		
Firm size → Firm agility	0.002	0.028
Industry1 (automobile) → Firm agility	0.197***	3.217
Industry2 (food, beverage and alcohol) → Firm agility	0.105†	1.782
Industry3 (electronics and electrical) → Firm agility	0.020	0.355
Industry4 (chemicals and petrochemicals) → Firm agility	−0.015	−0.272
Variance explained (R^2)		
Procedural justice	0.308	
Interactional justice	0.223	
Distributive justice	0.593	
Firm agility	0.478	
Model fit statistics: $\chi^2 = 993.199$; $df = 453$; $\chi^2/df = 2.192$; RMSEA = 0.070; CFI = 0.901; IFI = 0.903; SRMR = 0.077		

***$p \leq 0.001$; **$p < 0.01$; †$p < 0.10$.

For the whole sample, we found that legal protection was positively and significantly related to procedural justice ($\beta = 0.337$, $p \leq 0.001$) and interactional justice ($\beta = 0.356$, $p \leq 0.001$), but not related to distributive justice ($\beta = 0.046$, *n.s.*). Similarly, importance of *guanxi* had a significant positive effect on procedural justice ($\beta = 0.200$, $p \leq 0.01$) and interactional justice ($\beta = 0.185$, $p \leq 0.01$), but no statistically significant effect on distributive justice ($\beta = 0.032$, *n.s.*). There is a significant positive effect of government support on procedural justice ($\beta = 0.236$, $p \leq 0.001$), but no statistically significant effect on interactional justice ($\beta = 0.091$, *n.s.*) and distributive justice ($\beta = 0.061$, *n.s.*). In addition, procedural justice ($\beta = 0.431$, $p \leq 0.001$) and interactional justice ($\beta = 0.457$, $p \leq 0.001$) have a significant positive effect on distributive justice. There was no significant direct effect of procedural justice ($\beta = 0.117$, *n.s.*) on firm agility, but interactional justice ($\beta = 0.242$, $p \leq 0.001$) and distributive justice ($\beta = 0.404$, $p \leq 0.001$) were positively and significantly associated with it.

We then moved on to multi-group analysis based on ownership structure. In China, manufacturing firms are typically state-owned, privately owned, joint ventures (JVs), or foreign-owned (Peng 2003; Tan 2002; Zhao et al. 2011). The nature of firm ownership influences governance and control, and related mechanisms have direct influence on a variety of key factors, including the level of risk-sharing, the allocation of resources, the level of bargaining power, and management decision making (Zhao et al. 2011). To measure the impact of firm ownership, following the work of Zhao et al. (2011), the sample was classified into Chinese ($n = 183$) and foreign ($n = 58$) companies. Chinese companies comprise both state-owned enterprises (controlled or managed by a local or state government under the national government) and private enterprises owned and operated by Chinese nationals. Foreign companies include JVs (typically jointly owned by Chinese and foreign investors), which are significantly guided by foreign cultures; and wholly foreign-owned enterprises (owned by foreign investors), heavily influenced by foreign cultures.

Table 5 summarises the results of the multi-group analysis. The results indicate that the effects of legal protection on procedural justice ($\beta = 0.399$, $p \leq 0.001$) and interactive justice ($\beta = 0.372$, $p \leq 0.001$) were significant for Chinese firms; foreign firms only gain a positive effect for interactive justice ($\beta = 0.270$, $p \leq 0.01$). Thus, H1 is supported. Similarly, there were significant positive effects of the importance of *guanxi* on procedural justice ($\beta = 0.213$, $p \leq 0.001$) and interactional justice ($\beta = 0.192$, $p \leq 0.01$) for the Chinese firms while the importance of *guanxi* did not affect any justice dimension for foreign firms. Thus, H2 is supported. When we developed H3 we suspected foreign firms rely more heavily on government support but less so on legal protection and *guanxi*. The results support H3, and further explicate the following nuanced differences: government support is positively related to procedural justice for both Chinese ($\beta = 0.225$, $p \leq 0.01$) and foreign firms ($\beta = 0.258$, $p \leq 0.001$), but only foreign firms could gain distributive justice from government support ($\beta = 0.280$, $p \leq 0.001$).

H4 suggests the effects of procedural and interactional justice on distributive justice will be more profound for Chinese firms. As shown in Table 5, the results support H4. Procedural justice has a significant positive effect on distributive justice for Chinese firms ($\beta = 0.401$, $p \leq 0.001$) and marginally for foreign firms ($\beta = 0.265$, $p \leq 0.1$). In addition, interactive justice has a positive effect on distributive justice for Chinese firms ($\beta = 0.469$, $p \leq 0.001$) and this is not the case for foreign firms. Since foreign firms in China gained fewer positive effects from the institutional forces and justice in the supply chain, H5 is supported too. Table 5 shows all three dimensions of justice significantly affect the agility of

Table 5. Results of multiple-group analysis across Chinese and foreign firms.

	Chinese controlled ($n = 183$)		Foreign controlled ($n = 58$)	
Structural paths	Estimate	*p*-Value	Estimate	*p*-Value
Legal protection → Procedural justice	0.399	0.000	0.079	0.466
Legal protection → Interactional justice	0.372	0.000	0.270	0.005
Legal protection → Distributive justice	0.055	0.454	0.149	0.218
Importance of guanxi → Procedural justice	0.213	0.000	0.018	0.813
Importance of guanxi → Interactional justice	0.192	0.002	0.087	0.206
Importance of guanxi → Distributive justice	0.080	0.117	−0.121	0.134
Government support → Procedural justice	0.225	0.006	0.258	0.000
Government support → Interactional justice	0.054	0.494	0.069	0.278
Government support → Distributive justice	0.018	0.771	0.280	0.001
Procedural justice → Distributive justice	0.401	0.000	0.265	0.087
Interactional justice → Distributive justice	0.469	0.000	0.160	0.372
Procedural justice → Firm agility	0.148	0.020	−0.099	0.170
Interactional justice → Firm agility	0.219	0.001	0.071	0.336
Distributive justice → Firm agility	0.254	0.003	0.299	0.001

Table 6. Results of OLS regression for moderation effect (a post hoc analysis).

	Model 1	Model 2	Model 3
Control variables			
Firm size	0.024 (0.347)	−0.074 (−1.460)	−0.075 (−1.477)
Industry1 (automobile)	0.206 (2.750)**	0.174 (3.264)***	0.168 (3.091)**
Industry2 (food, beverage and alcohol)	0.166 (2.279)*	0.095 (1.835)†	0.104 (1.989)*
Industry3 (electronics and electrical)	0.044 (0.630)	0.031 (.635)	0.022 (0.441)
Industry4 (chemicals and petrochemicals)	0.026 (0.366)	0.023 (0.465)	0.016 (0.331)
Independent variables			
Legal protection (LP)		0.280 (5.262)***	0.294 (5.293)***
Importance of guanxi (IOG)		−0.054 (−1.102)	−0.053 (−1.063)
Government support (GS)		0.144 (2.866)**	0.117 (2.231)*
Procedural justice (PJ)		0.039 (0.646)	0.078 (1.147)
Interactional justice (IJ)		0.221 (3.581)***	0.220 (3.431)***
Distributive justice (DJ)		0.284 (4.157)***	0.252 (3.445)***
Interaction effect			
LP × PJ			−0.008 (−0.129)
LP × IJ			−0.003 (−0.036)
LP × DJ			−0.153 (−1.996)*
IOG × PJ			−0.022 (−0.298)
IOG × IJ			0.049 (0.697)
IOG × DJ			0.028 (0.368)
GS × PJ			−0.070 (−1.058)
GS × IJ			0.019 (0.228)
GS × DJ			0.134 (1.692)†
R^2	0.045	0.543	0.565
Adjust R^2	0.024	0.521	0.526
F-value	2.195†	24.720***	14.303***
Max VIF	1.376	2.337	3.553

Note. Standardised coefficients (betas) and *t*-values are reported; Dependent variable: firm agility; ***$p \leq 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.10$.

Chinese firms, but only distributive justice positively affects agility ($\beta = 0.299$, $p \leq 0.001$) for foreign firms.

5.2. Post hoc robustness analysis

Previous research shows that some dimensions of justice may interact with one another (Ellis, Reus, and Lamont 2009). We, therefore, conducted a post hoc robustness analysis using a moderated regression analysis to ascertain whether the three dimensions of organisational justice moderate the effects of institutional forces. The results are reported in Table 6. Firm agility is the dependent variable in the three models, and model 3 included nine two-way interaction terms (LP × PJ, LP × IJ, LP × DJ, IOG × PJ, IOG × IJ, IOG × DJ, GS × PJ, GS × IJ, and GS × DJ). The results reveal that no significant positive moderating effect was found; and only distributive justice was found to moderate the relationship between government support on firm agility at the 0.10 significance level. Thus, it can be concluded that the mediation model tested earlier is the best-fitting model.

6. Discussion

6.1. Theoretical implications

Institutional theory has been applied to show institutional forces can affect trust (Cai, Jun, and Yang 2010) and justice (Hemmert et al. 2016) in the supply chain, but these effects may vary between local and foreign firms. The organisational justice literature indicates justice serves as the basis for a trustworthy and collaborative relationship (Griffith, Harvey, and Lusch 2006), which is thought to be key to building

agility. By integrating institutional theory with justice and agility literature, this study offers several theoretical implications.

First, we cannot assume the three institutional forces affect different dimensions of justice the same way across Chinese and foreign firms, even though they both operate in the same country. In China, business ties are more important than political ties because of deficiency in the legal systems, but Chinese firms use political ties when government supports are weak (Sheng, Zhou, and Li 2011). Here we add insights to foreign firms. In a less matured legal environment, institutional theory should recognise legal protection (that is less transparent and fair) and embedded relationship structures (*guanxi* in China) may favour local firms in terms of procedural and interactive justice. Even Chinese firms do not trust legal procedures and rely more on *guanxi* and government supports to facilitate collaboration (Cai, Jun, and Yang 2010). To compensate for these disadvantages, foreign firms seek support from the government to secure both procedural and distributive justice rather than relying on legal protection and *guanxi*. These new insights alter how we theorise the effects of institutional forces on justice (Hemmert et al. 2016).

Our results suggest that institutional effects are contextually bound. So, are our results valid for foreign firms in other countries? Data from South Korea (including 92.6% of Korean firms; some of the others are Chinese firms) show positive links between legal protection and both procedural and distributive justice (Hemmert et al. 2016). However, our results show legal protection did not add distributive justice in China for both Chinese and foreign firms. Thus, the mechanisms that create justice vary due to differences in legal protection in different countries with different characteristics, besides market factors like technological turbulence (Sheng, Zhou, and Li 2011). Legal protection can ensure distributive justice among (mostly) Korean firms, but this is not the case in China. This may be due to the uncertain legal structures associated with China's transitional economy, and the need for firms to look to the government for help and support in developing their methods of interacting and resolving potential conflicts (Cai, Jun, and Yang 2010; Froese et al. 2019). This study informs institutional theory to further characterise legal protection to better understand their roles in different countries.

Second, the above implications suggest it is important to identify sources of distributive justice since our results show it is key to a firm's agility. By incorporating interactive justice, this study provides more nuances into the roles of between procedural and distributive justice (Griffith, Harvey, and Lusch 2006). Our results suggest the organisational justice literature should distinguish sources of distributive justice from different institutional forces in terms of their strengths. Hemmert et al. (2016) show government support and procedural justice are closely related. Likewise, this effect is crucial for establishing distributive justice among Chinese and foreign firms in China. Chinese firms develop distributive justice through procedural and interactive justice because they can exploit cultural and relational forms embedded in their connections and experience. However, distributive justice for Chinese firms depends heavily on procedural and interactive justice developed in the supply chains rather than the institutional environment. Instead, foreign firms relied on government support to achieve both procedural and distributive justice as an effective mechanism to achieve distribution and agility.

Third, the study also advances the literature on *guanxi* and justice. We show the roles of *guanxi* may differ between Chinese and foreign firms. Chinese firms maintain procedural and distributive justice based on *guanxi,* but this is not working for foreign firms. Among the Chinese firms that share the same norms, the reciprocal nature of *guanxi* promotes fairness in the decision-making process, and enhances coordination between parties, leading to procedural justice (Luo 2007). This could be perceived as unfair by foreign firms that do not build business relationships and commitment based on *guanxi*. That means that the theoretical conceptualisation of the institutional forces-justice relationship must consider the cultural background, such as *guanxi* in China, *blat* in Russia, *compadre* in Latin America, and *wasta* in the Middle East and North Africa.

Fourth, institutional forces at an institutional level, justice at a supply chain level and agility at a firm level is an effective and comprehensive approaches to better understand how macro environments affect the supply chain and firm-level strategies and performance. Furthermore, we show that we cannot assume all institutional forces and justice dimensions have the same effect (Cai, Jun, and Yang 2010; Hemmert et al. 2016) for local and foreign firms in the same institutional environment. In fact, we should divide the institutional environment into local vs foreign, the former is familiar with the legal systems and can use their embedded relationship structures to gain protection and resources during difficult times, while the former relies more on directly gaining support from the government, even though they can try to be more embedded into the local institutional environment. This may be due to the influence institutional factors have over the process of doing business in China, and the governance of transactional relationships being more instrumental than the perception of equitable outcomes in the relationship (Hemmert et al. 2016; Narasimhan, Narayanan, and Srinivasan 2013).

Fifth, this study adds a new dimension to the application of organisation justice into supply chain research (Cai, Jun, and Yang 2010; Hemmert et al. 2016). Studies have proposed that higher levels of interactional justice can lead to increased trust and commitment (characteristics of distributive justice) between two actors (Luo 2007), thus implying that interactional justice may be a prerequisite to distributive justice. Similarly, when procedural justice is low, it can cause mistrust in a relationship. Narasimhan, Narayanan, and Srinivasan (2013) hypothesise that this mistrust may only be resolved by focussing on improving procedural justice, suggesting that it is also a necessary antecedent for distributive justice, as confirmed by our results. These effects of

procedural justice and interactional justice on distributive justice are crucial to explaining firm agility, which is new to the agility literature.

6.2. Managerial implications

Our research findings provide new and insightful implications for managers, especially which institutional forces to pay more attention to building up organisational justice and agility. Our results ascertain the importance of all three organisational justice types in developing agility among Chinese firms, particularly *guanxi* and legal protection. Clearness and fairness throughout the development of inter- or intra-firm relationships (procedural justice) can help improve governance and coordination, which could in turn lead to the equitable allocation of benefits (distributive justice). Chinese firms achieve agility through fairness, generated from a fair distribution of risks and rewards, which comes from clear, transparent, and fair procedures for treating each other (procedural justice) and interactions (interactive justice). To ensure procedural justice, Chinese firms need all three institutional forces. While interactional justice intuitively depends on *guanxi,* our results show that firms also need to understand how to use legal frameworks to facilitate open communication. It is important to recognise that government support only helps build procedural justice, meaning the government leaves issues related to the distribution of risk/-benefits and interactions to the market, as in the Western world.

While *guanxi* continues to play an important role in Chinese business and can be utilised strategically for competitive advantage, potential negative consequences of *guanxi* can include personal indebtedness, the containment of business failures and innovation within a closed network, and an inability to see changes in the market outside of the network. Nevertheless, our results suggest that foreign firms generally lose out on the favours that *guanxi* can bring, and they do not have much confidence in the ability of the legal systems to maintain procedural and distributive justice. Foreign firms cannot establish relationships with Chinese firms and governments with sufficient traction to foster technology transfer and innovation. When engaging with Chinese firms, it is important to be aware of the interpersonal, reciprocal connections needed to develop *guanxi*, as well as its benefits and potential drawbacks.

Our results provide some policy implications and suggestions to both Chinese and foreign firms on how to work with the government. The legal system appears to lack procedural transparency, as experienced by foreign firms, but this shortcoming is attenuated by social norms (*guanxi*) among the Chinese firms. Foreign firms may need to hire well-connected Chinese executives to help them navigate local *guanxi* networks and norms. Local governments appear historically more inclined to favour indigenous Chinese firms, and indigenous managers are adept at developing *guanxi* with government authorities and can utilise these relationships for support. While this may be changing in regions more open to foreign entrants, foreign firms in our samples relied heavily on government support to maintain both procedural justice and distributive justice. The limited effectiveness of procedural justice and interactional justice in building agility means that foreign firms rely on other means. Policy makers intend to promote foreign direct investment and technology transfers needed to reduce these limiting institutional environments.

Knowing how partners perceive justice can help reduce misunderstandings in the relationship. When engaging with foreign firms, Chinese firms need to recognise that their foreign partners perceive a lack of legal protections and fair treatment by the government, leading to a tendency to hoard important information and maintain transactional relationships. When Chinese firms collaborate with foreign firms, it is good to know they can help gain government support to establish distributive justice that is hard to achieve. Foreign firms, on the other hand, need to learn how Chinese firms utilise interpersonal relationships to obtain favours in relation.

Finally, the fact that government support creates distributive justice for foreign firms suggests the role of negotiation with the government to protect foreign firms' interests while the government also needs to maintain the right balance for competition between Chinese and foreign firms. Theoretically, government support in the Western world can have a narrow scope, but it also reflects intervention and negotiation to maintain distributive justice. The relative slowing of economic growth in the Chinese economy in recent years could mean foreign firms are facing more regulatory challenges, which favours the growth of indigenous firms (Froese et al. 2019), entailing closer negotiation with the government to maintain fairer competition.

7. Limitations and future research

Our results must be interpreted considering the limitations of this study. First, the study focussed on only three institutional elements (i.e. the importance of *guanxi*, legal protection, and government support). There are other institutional forces, such as official intervention and the arbitrariness of officials (Cai, Jun, and Yang 2010; Child, Chung, and Davies 2003), and we did not differentiate the roles of local versus central government. Future research should examine these institutional factors and their impacts on agility and/or business performance. Second, we empirically test the theoretical framework using survey data gathered from manufacturing firms and a limited number of foreign firms in China. Future research may consider extending this study to other countries (for studying the manufacturing industry) or a variety of industries covering an equal number of local and foreign firms, which would help to improve the generalisability of the industry-specific national results gained from this study. Third, this study only investigates the current impacts of institutional forces on organisational justice using a cross-sectional research design, however, such effects might change over time,

especially in the current volatile and uncertain global context. Future research may conduct a longitudinal study to examine the dynamic nature of the effects of institutional forces on justice and agility.

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