Contextualizing employee voice of innovative China: tradition and modernity within the knowledge-intensive sector

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Contextualizing Employee Voice of Innovative China

Tradition and Modernity within the Knowledge-Intensive Sector

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Abstract—**This paper discusses the employee voice in the high technology space sector within P.R. China, which is a fast growing sector globally. Using an integrative perspective on employee voice, this paper provides insight in this under-researched knowledge-intensive sector. The Chinese achievement in the space sector within a short time span and under considerable resource constraint could be explained by the dedication of generations of scientific talent. It is argued that the notion of employee voice among the highly skilled knowledge workforce should be considered in the context of the unique macro factors influencing the sector since 1949, as well the culture and ideology shaping the country with a long unique civilization. Hence, the path dependency of employee voice is associated with long term influences that are beyond the control of the firm.**

Keywords-Employee voice; Chinese space sector, Culture and Ideology

I. INTRODUCTION

Employee voice incorporates multiple meanings and covers the articulation of individual dissatisfaction, the expression of collective organization, the contribution to management decision-making and the demonstration of mutuality and cooperative relations [1]. It has often been associated with labor practice within liberal democracy as embodied in Articles 5, 6, 21, 22, 26, 28 and 29 of the European Social Charter, which guarantee the voice of employees working across member states [2]. Employee voice is not only determined by the legislative framework, but also by technological factors, economic factors as well as cultural and ideological factors that differ across industries, regions and countries [3]. These macro factors influence individual and firm variables, which subsequently explain further divergence of employee voice across borders.

Based on the widely cited definition in which employee voice is seen as the ways and means through which employees endeavor to have a say and potentially influence organizational affairs relating to issues that affect their works and the interests of managers and owners [4], there is a general view that the concept is not much practiced in countries with a political system of democratic centralism such as P.R. China. High profile cases such as Foxconn and Walmart as well as the surging labor movement in the labor-intensive manufacturing sector have often been used as examples of employee voice; recent academic research among the state sector which is characterized by loss-making suggests a bleak picture of employee voice. In particularly, a survey of over 1,000 state firms have shown that there was a low degree of discretion in relation to individual management of work task, management of work schedule as well as management of workload [5]. Other studies have documented the importance to address the issue of voice within manufacturing sector due to the changing balance of power between employers and employees [6]. Overall, the cases above reflect one of the many faces of employee voice in China.
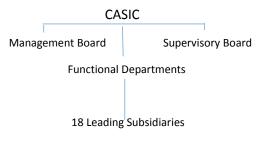
This article takes a different path and focuses on the successful, knowledge-intensive and state dominated space sector; it aims to provide a different perspective on employee voice and allows us to understand the practice adopted by historical firms that have been re-organized and re-branded since Deng Xiaoping's economic reform. As the space sector depends on the motivation and innovation of autonomous knowledge workforce, it provides a unique setting to contextualize employee voice and illustrate practices within China's innovative sector where human capital is the key to sustainable growth. The finding of this article will, therefore, be useful for managers responsible for direct investment in high-tech sectors within China.

II. AN OVERVIEW OF THE SPACE SECTOR

The Chinese government established the Chinese Academy of Sciences in 1949, but it only pursued a formal initiative to take part in research projects in 1956 [7]. The beginning of the space sector in China was linked to a generation of scientists returning from the USA and Europe. For example, a fifth of the 5,000 graduates in the USA chose to go back to China [8]. Various institutions in different names had evolved from the Chinese aerospace industry since its inception, and they could be traced to the Fifth Research Academy that was established under the Ministry of Defence in 1956. The Fifth Research Academy

was restructured during politico-economic change and was the Seventh Academy of Machine Building (1964), the Ministry of Astronautics Industry (1982) and the Chinese Aerospace Corporation (1993) [9]. In 1999, the Chinese Aerospace Corporation was re-organized into the administrative function as headed by China National Space Administration (CNSA) whereas the research, design, and production functions were grouped under China Aerospace Science and Technology Corporation (CASC) as well as China Aerospace Science and Industry Corporation (CASIC). CASC and CASIC are independent entities, with some 300,000 employees [10]. Figure 1 illustrates the ownership structure of CASIC. Additionally, there are entrepreneurial initiatives in the space sectors including One Space, Landspace and Kuang-chi. China is currently engaged in space products such as satellites, space stations, space ships, rockets and launch vehicles. Its high profile Shenzhou space ship series has been launched successfully since 1999; indeed Shenzhou 5 enabled China to become the third nation to independently undertake manned space missions in 2003, and more recently Shenzhou 11's two crew completed China's 30 days space mission in 2016 [11]. China is currently the only country with an independent space station to support humans on short-term stays in space; its first prototype Tiangong-1 space station was operationalized between 2011 and 2013. Overall, China's achievement in the space sector within a short time span, under considerable resource constraint and within the context of tremendous changes in macro environment, has been and is due to the dedication of its knowledge workforce.

FIGURE 1   ORGANIZATIONAL STRUCTURE OF CASIC

III.   CONTEXTUALIZING EMPLOYEE VOICE: THEORETICAL PERSPECTIVES AND PRACTICES

A. *Existing Voice Theories*

Social scientists have been pre-occupied with the ideas revolving around the concept of employee voice since the 18th century [12]. The concept has been clarified in the past decade within three dimensions: individual voice versus collective voice, employee-employer shared agenda versus contested agenda and the extent of employer influence versus employee influence over decision making.

Theoretical frameworks have been adopted to understand the emerging concept. Organizational behavioral theorists have discussed employee voice regarding firm determinants including structure, culture, team and leadership style as well as individual determinants of attitudes, personality, experience, demographics, position…etc. Such models relate the key organizational and psychological variables to voice at the individual level and do not exhibit a broader understanding of the concept [13]. Economists, on the other hand, have utilized transaction cost approach to explain the choice of voice governance mechanism for firms and industrial sectors operating within an unregulated labor market, and assuming bounded rationality, opportunism and neutral risk [14]. Accordingly, individual firms and firms within particular sectors will avoid voice mechanism when using temporary workforce paid on piece-rate. However, they will utilize the governance options of union-voice, non-union voice and a mix of union- and non-union voice as to minimize the transaction costs when handling contractual employment relationship, as in the make, buy and hybrid governance scenario of intermediate goods production [15]. The approach assumes the same mode of governance options within sectors facing similar industrial dynamics. A cross-disciplinary approach has been put forward by employment relations theorists; they provide a useful framework to explain the concept of employee voice in contrasting contexts; in particularly Kaufman provided a model encompassing external environment, organizational configuration, governance structure, employment relationship, internal contingencies and voice climate. The external environment could further be divided into economic factors (e.g. macro cycles and economic growth), legal factors (e.g. employee rights, regulation, union organizing and bargaining) and socio-cultural factors (e.g. individual versus collective attitudes and authority-conformity norms) [16].

The unique historical setting of China and the pace of recent development has provided an opportunity to understand employee voice in one of its emerging global sectors. The external environment is elaborated within Kaufman's model in relation to the under-researched space sector, where highly skilled knowledge labor is in short supply and is a key to provide sustainable competitive advantages to firms. Based on the cross-disciplinary and broad definition of employee voice, key features of voice can be summarized among core employees involved in the technological areas of the Chinese space sector as [17]:

- Articulation of *individual* dissatisfaction in an indirect manner to the line managers.

- *Teams* inputs to managerial decision making in the form of quality circles and project teams.

- *Trade union* representation – but the union does not provide a countervailing source of power to management as in the UK.

- Presence of *works council*, yet they do not have significant influence over management decisions as in Germany.

Overall, the system in the space sector within China is represented by both individual and collective employee voice with shared agenda influenced by firms or governmental institutions. Employee voice is also associated with the strategy to engage core employees in the form of quality circles and team work. Table 1 further compares the key features of employee voice with space sectors in Japan and the USA and illustrates their national patterns. This table highlights the difference between the USA and Japan despite their similar level of economic development as well as the difference between Japan and China despite their closer cultural distance.

TABLE 1   COMPARING EMPLOYEE VOICE ACROSS SELECTED COUNTRIES

	The Space Sector		
	P.R. China	*Japan*	*USA*
Articulation of individual dissatisfaction	Indirect	Indirect	Direct
Contribution to managerial decision making	Selected technology & focused	Firm wide mechanism to compete	Experts to unilateral leadership
Trade union role	National interest	Firm based	Interests group
Works councils	Communicative role	None	None

The case study strategy was adopted in this research concerning employee voice; the case study was based on data collected from multiple sources, i.e. archival data, discussion with industry participants, personal interviews, firm surveys as well as industry and academic publication. Discussion with industry participants focused on three in-depth face-to-face meetings which took place in 2015; the typical meeting lasted for over two hours and was the primary source of data. Participants had also provided comments on further related topics. Interviews with three project level management during the same period also provided an overview of the process. Firm level archival data in Chinese in the format of trade union communication, firm policy document, in-house communication, press release as well as annual report was used to facilitate the triangulation of the data. The data analysis involved the assessment of patterns and themes within the four broad categories of legal, technological, economic and cultural factors that explained the conceptualization of employee voice in CASC and CASIC.

IV.   LEGAL, TECHNOLOGICAL AND ECONOMIC FACTORS ON EMPLOYEE VOICE

In this section, we will examine the legal, technological and economic factors that impinge upon employee voice within the Chinese space sector as to understand the source of collective voice via trade union, works councils and teams. Specifically, the sub-sections will discuss the weakness of trade union, the lack of influence of works councils and the autonomous project teams.

A.   Trade Union and Works Councils

The All Chinese Federation of Trade Union (ACFTU), founded in 1925, is the recognized official union for employee voice in the space sector [18]. Despite its long history, the ACFTU has never operated along the idealized Western model of Unionism. Since the Chinese economic reform in 1978, the ACFTU has evolved into a division within the organizational hierarchy that has specialized in the drafting of labor legislation for the new Chinese economy [19]. Indeed, the new Chinese Trade Union Law states that its purpose is to assist the people's government in their work [20]. Within the space sector, core employees are provided with employment contracts to replace the traditional iron rice bowl of lifetime employment; additionally, human resource management has been introduced, with a focus on tools such as job satisfaction surveys. Overall, the ACFTU's activities at the firm level concern about human resource, enhance the sector's performance rather than the representation of employee interests [21].

Works councils were officially recognized in China from 1949; however, they were abolished during the Cultural Revolution. Since the economic reform, works councils as in the format of Staff and Workers Representative Congress (SWRC) have been endorsed in various legislations such as the Company Law (1993 and 2004). CASIC subsidiaries including the Second Academy in Beijing and the Fourth Academy in Wuhan have convened SWRC meetings since 2010. CASC and CASIC now routinely report the SWRCs meetings that have taken place within their subsidiaries; CASC also evaluates the work of SWRCs internally and selects the best SWRCs among all the subsidiaries. For instance, there were fourteen best SWRCs in 2015. It is expected that SWRC could provide modern democratic management on the premise that its function is to provide a dialogue between management and employees. For instance, business plan and safety reports were communicated in some SWRCs within CASIC last year, and the SWRCs provided a channel to discuss employees' proposals. The recent emphasis on SWRC as a source of employee voice is associated with China's socio-economic changes and could be seen as a human resource management strategy towards sustainable firm performance.

B.   Marketization and Corporatization

The Chinese economic reform has incrementally changed the business environment in China. The institution overseeing the space sector is the State-owned Assets Supervision and Administration Commission (SASAC), which supervises the operation of the two state conglomerates CASC and CASIC [22]. The strategic mission of the sector, on the other hand, aligns with China's five-year plans and is orchestrated by the space agency

CNSA. The CNSA also manages national research programs and international cooperation. The space sector has continuously adopted new practices that affect employee voice including quality circles, employee evaluation of top management and stock ownership schemes [23]. Quality circles have been diffused in the space sector since the 1980s based on the evidence that involving employees would yield positive performance and improve quality. With the reform in executive remuneration since 2009, collective employee voice has contributed towards 10% of the rating of top management performance in addition to the inputs which consist of firms' financial results, other managerial ratings, the Communist Party representatives' evaluation and the Supervisory Board's assessment [24]. Finally, the more recent implementation of stock ownership schemes offered stocks to a small number of core employees and therefore should be seen as a motivating scheme.

C. Project Teams as High-Tech Structure

Project teams are the basis of economic organization in high-tech sectors globally. The mission of project teams in the Chinese space sector revolves around successful completion of assigned projects, which allow the teams to achieve customer satisfaction, market development and technology advancement. Famous Chinese proverbs have highlighted the pros and cons of teamwork as in "San ge chou pi jiang, cou ge Zhuge Liang" (Three humble shoemakers can brainstorm and achieve more than the strategist Zhuge Liang in the Three Kingdoms Period), which can be contrasted with "Yi shan bu rong er hu" (One mountain could not accommodate two tigers). Project teams are self-managed and make decisions that impact upon the project they work on during the process of achieving set objectives and operate within a research environment that enables open-intellectual discourse within defined parameters. Project teams are a source of voice among technical employees since they set their own milestones within the overall targeted deadline [25]. Formal project meetings and informal exchanges between the members and the leaders provide platforms for discussing technical issues. An additional feature of Chinese project teams are managed by "liang zong"; in other words, a technical manager and an administrative manager who are able to exchange tacit knowledge and the less experienced manager who can also acquire tacit skill in motivating team members, encouraging them to collaborate to achieve their best.

V. CULTURE AND IDEOLOGY TOWARDS EMPLOYEE VOICE

Culture and ideology shape the type and intensity of workplace issues and the manner these issues are presented to the firms, and therefore relate to how individuals and collective voice are organized, and any potential impact they might have. For instance, the administrative function of ACFTU has been accompanied by social activities such as seasonal gifts and social activities whereas the transformed

state firms are still conscious of taking care of the retired employees [26].

We will continue to explore the remaining key feature of employee voice in this section – the articulation of individual dissatisfaction. The articulation of individual dissatisfaction in an indirect manner for the sake of maintaining harmony, which preserves the ability to continuously cooperate with one another, has been widely documented in the literature and is the preferred mode of communication among East Asians including Chinese and the overseas Chinese [27]. Recent research has explored the quality of exchange relationship between supervisors and subordinates that might influence such behavior. The project team structure and the strong culture of the space sector has been and is conducive to good supervisors and subordinates relationship; however, the industry founders' bearing of extreme resource constraint and without articulating dissatisfaction has left historical and cultural imprint at the current workplace.

The three key cultural themes that explain the Chinese preference for indirectness and reinforces the indirect approach to employee voice will now be explored. But we will first differentiate the response to dissatisfaction within the Chinese culture. The rule for dissatisfaction has habitually revolves around toleration. Indeed, the pictogram of the word tolerate (忍) is represented by a knife thrusting at one's heart; hence, one of the key lessons in life is about learning how to endure both physical and psychological hardships while keeping a focus on the eventual goals. Despite this notion of endurance, it is justifiable to address prolonged dissatisfaction and suffering with forcible actions as seen in contemporary history where ground breaking changes had been initiated by the Xinhai Revolution (1911) and the Communist Revolution (1949) challenging the status quo and overthrowing established political orders.

The employee voice in the context of articulating dissatisfaction indirectly, embodies a salient feature of Chinese communication and could be contrasted with the Western norm of assertiveness and argumentativeness. It should also be noted that the emergence and success of the space sector during the 1950s and 1960s had been associated with the ability of participants to tolerate numerous obstacles to growth including insufficient resources, under-equipped facilities and inadequate compensation during the founding decades [28]. This unique industrial context has been interwoven with signature stories of overcoming hardship to achieve targets, reinforced by socio-culture values of harmony, collectivism and continuity. Overall, the historical setting of the sector further condones individual indirectness when articulating low level of dissatisfaction in order to prioritize good working relations.

A. Harmony

The importance of harmony in Chinese culture has been described as a strong preference for working compromises in place of unworkable absolutes and to merge seemingly conflicting elements into a unified harmony [29]. Harmony is a key to a good interpersonal relationship among Chinese and has been advocated by Confucianism, Daoism and

Buddhism throughout the centuries; the three thoughts provide the philosophical foundation and assert the greatest influence over Chinese minds as they were either endorsed by ruling dynasties or diffused by popular culture. The Emperor Xiaozong (1163-89) compared the impact of the three philosophies to the legs of the widely used bronze ceremonial vessel during the period, which were so integrated that all three had to exist simultaneously in order to function properly.

Confucianism provides a framework for a structured and hierarchical social relationships that contributes towards a harmonious society. The ultimate goal of education for individuals is to cultivate virtues for a peaceful, ordered society [30]. Indirect communication is a norm in Confucius society since it enhances the core virtues of ren (a humanistic love which embodies benevolence) and li (propriety or ritual performance within a specific role such as fathers, sons, employers and employees). Employee voice should therefore be appropriately orchestrated by the paternalistic firm and reciprocated by employees with holistic consideration. Daoism perceives cosmic harmony as embodied in the paradox of yin and yan, which allows the seemingly contradiction to co-exist based upon complementary, interconnectedness and interdependence. The idea of determinism where everything has its own cycles, patterns and processes suggests the social relationship tends to emerge naturally. Employee voice is therefore harmonious and should be tackled as a path of least resistance since the focus of employer-employee relationship is not about conflict or peace, love or hate, submission or capitulation… The relationship is set within the firm's life cycle and employee voice will therefore follow the natural order, which points to embrace rather than resist any potential conflict. Finally, Buddhism which was diffused from India to China through trade links since the Han Dynasty adapted to the Chinese culture and evolved as Chan Buddhism. Chan Buddhism believes in interdependence and karma; it suggests that we should look inside ourselves for enlightenment, which is the only way to cease suffering. The teaching of Buddhism leads to the de-emphasis of attachment to perishable belongings and the belief of a good society where everyone treats all beings as one would treat oneself; such compassion would enable us to find harmony within our existence. Overall, the philosophical underpinnings of Chinese culture converge on harmony among Confucianism, Daoism and Buddhism; however, the ends of harmony for Confucians, Daoists and Buddhists as a path are different since they aim to achieve prosperity, the balance of nature and enlightenment respectively [31].

B. Collectivism

Individualism and collectivism are core values that could be used to differentiate cultures [32]. Collectivism primarily suggests that the interests of the group prevail over that of the individual. It places a strong emphasis on the inter-dependent relationships among people as well as the socio-economic units they create [33]. As a contrast, individualism perceives the interests of self and is based on the assumption that each human being is unique and independent;

individualism is manifested in loose human relationships, which are numerous, less intense and dominated by weak ties [34]. The notion of rational behavior in Western literature is constructed with the model of individualistic human behavior. Indeed, within the highly individualistic Anglo-American cultures, the concept of voice is perceived as a channel for employees to counter-balance the power of employers within a win-lose game whereas within the moderately individualistic Germanic culture, employee voice is the representation and coordination of stakeholders to achieve common objectives within the system. The collective culture of China explains the presence of employee voice, not simply as a representation of the interests of employees but a holistic consideration of the interests of the work team, the firm and the nation. During interpersonal communication, collective culture endorses face-saving rather than face-losing, hence the indirect communication mode in expressing individual satisfaction is context-specific.

C. Continuity

The historical continuity of achievement within Rocketry, Astronomy and Astronautics has created a sense of destiny for knowledge employees in the space sector [35]. Since time immemorial, Chinese emperors bestowed with the Mandate of Heavens routinely appointed Imperial officers to observe the sky and meticulously prepared documentation such as the Silk Atlas of Comets in the 185 B.C. to accumulate a national body of knowledge about the heaven. This was accompanied by China's technological achievement including the discovery of the sundial in 104 B.C. and the discovery of gun powder in 220 A.D. China also commanded the use of primitive rockets in 1083 A.D. and then the mastering of fundamental elements of modern rockets as in the First Flying Spear in 1119 A.D. [36]. Being from a culture characterized by collectivism and harmony, the main tasks of participants in the sector is overwhelmingly to advance China's development in space; accordingly, there is a convergence of individual, firm, sectoral and national interests which focus employee voice on proper and relevant work issues enabling China to develop its technology and perhaps re-gain its once unrivalled leadership. The space sector, which has cultural significance for China, inevitably serves as a symbolic vehicle to help China search for its identity in the 21st century global order. Indeed, China's President Xi Jinping has publicly endorsed the pursuit of the space dream for modern China's national rejuvenation.

VI. DISCUSSION AND CONCLUSION

China strives to become by the mid-21st century "a modern socialist country that is prosperous, democratic, culturally advanced and harmonious" [37]. What is the current state of employee voice within China's high technology sectors such as the space sector? Knowledge employees are organized into teams that make judgmental decisions within projects; they also exhibit collective voice within the formal organizational framework through employee representation. This paper therefore presents a

picture that is different from the labor intensive sector. It illustrates one of the many faces of employee voice, which exhibits the impact of global technological influences such as team organization and work autonomy. At the same time, the employee voice has also been shaped by contemporary Chinese histories associated with trade unionism, works council and economic reform. Most interestingly, the weight of culture and ideology tracing back to the ancient past still runs silently and deeply, providing us the philosophical background to understand an individual approach to voice. The concept of harmony within China's collective culture and its glorious historical achievement in space-related technology has provided a powerful emotional context that defines employee voice and Chinese innovations.

Researchers within space technology have addressed the role of technology transfer and project management regarding China's recent technological catch up. But one of the most insightful conclusion was perhaps "China's greatest accomplishment may not be the development of new technologies, but the organizational skills that were necessary to orchestrate a large number of organizations into a united effort to conduct the exacting business of spacecraft manufacturing" [38]. This paper further contributes to the understanding of the human side of the successful Chinese space sector, where traditional heritage complements the values of modern technology within an era of macro-economic changes. It also continues the volume of work towards the understanding of context within human resource literature [39]. Finally, the paper highlights that the understanding of contextual influence and its path dependency is important for culture and nation with long continuity such as P.R. China; this might be a point that could be neglected by managers and firms originated from youthful nations with relatively short term orientation.

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