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Impact of human resource slacks on firm performance: Evidence from a developing country*

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Abstract

Purpose of this paper is to investigate whether HR slack leads to improve firm performance, and what is the impact of HR slack in absolute and in relative terms on firm performance in a developing country. It also examines how ownership types moderate the HR slack-performance relationship. The longitudinal data-set of 11,985 firms-year observations from 2000-2009 were used and generalized linear models (GLMs) employed for analyzing data. The findings reveal that (1) absolute HR slack (AHRS) leads to enhance firm performance; (2) AHRS is positively and relative HR slack (RHRS) is negatively affected firm performance; (3) both AHRS and RHRS have inverse U-shaped effects on firm performance. (4) AHRS is positively influenced on performance of both state-owned enterprises (SOEs), and private-owned enterprises (POEs). RHRS is negatively affect performance of SOEs. It can be concluded that both absolute and relative HR slacks lead to increase the firm performance up to a certain level, thereafter, firm performance is declined (Curvilinear relationship). The paper is original in its contribution to the organizational slack–firm performance literature by examining the relevance of absolute and relative HR slacks as indispensable sources.

Key words: *human resource slack, firm performance, ownership, China*

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1. Introduction

China differs from western countries in a wide range of characteristics such as culture, society, political and economic systems, and presents the most formidable challenge to the managerial paradigm developed in the west (Tan, 2003). Furthermore, the field of management is about the people and the organizations. More people work for firms in China than in any other country; we cannot argue that current theories and methodologies are universal unless they can explain the various managerial issues of firms that employ about 2 percent of the world's population (Tan, 2003). Recent researches and media coverage keep an eye on China's growing engagement in the global economy emphasizing what are new opportunities and threats to other developing countries and there is a gap between the ways in which firms in China and Western countries conduct their businesses (Gonzalez-Vicente, 2012).

Following decentralization (Huaichuan, 2005) and privatization trend in China, there is now a wide range of firms conducting overseas investments and business, including SOEs, and POEs. China a formidable competitor to developing countries, such as South American countries: SAC (Moreira, 2007) and its emergence as a positive or negative shock to developing countries. Hence, firms that must interact, compete, or collaborate with Chinese firms should benefit from better understandings of China's business environment (Child & Tse, 2001; Luo & Peng, 1999; Tan, 2002; Yan & Gray, 1994) and their business practices.

The effects of HR slack and firm performance are imperative in the context of developing countries. It helps to cope with unexpected challenges and opportunities. Some firms are strategically building their employee base in preparation for performance. In contrast, other firms may hold only a few numbers of employees for implementing their strategy. Some firms retain their skilled employees during the period of economic recession or the period of low demand for their products to ensure themselves to be able to capitalize bloom market in the future. Znidarsic (2010) find that Slovenian firms encourage employees to extend their working careers and postpone their retirement, and this finding supports that HR is a scarce resource. Hatti et al. (2001) point out that HR can be used in many different ways and places; it is rare and socially complex productive resource which is more likely to offer a competitive advantage. HR is a crucial capability, which is the firm-specific knowledge and common goal of firm will reduce disagreements and increase the effectiveness and efficiency of utilization of other resources. Competitive environment fosters efforts to retain and to protect the employees who are essential to gain long-term competitive advantage (Barney, 1991) and shifting HR within the organizations is structurally difficult and may face political hurdles (Mishina, et al., 2004). Further, firm needs much competitive effort for acquiring skilled labor; it increases the rarity of HR slack (Voss, et al., 2008).

HR slack has not been exclusively researched in slack resources; especially in developing and transitional countries, we believe that HR slack is a natural extension of the existing slack literature in emerging and transitional economies. Most of existing organizational slack studies are about financial slacks (Bromiley, 1991; Cheng & Kesner, 1997; Davis & Stout, 1992; Greenley & Oktemgil, 1998; Hambrick & D' Aveni, 1988; Nohira & Gulati, 1996; Miller & Leibleni, 1996; Reuer & Leibleni, 2000; Singh, 1986). Fewer studies have been done to investigate about HR slack (Welbourne et al. 1999; Love & Nohria 2005; Mellahi & Wilkinson 2010). Many of these above studies are carried out in developed economies, which are large, less regulated and have efficient factor markets and findings from the developed economies are ambiguous (Arnold & Quelch, 1998; Tan & Peng, 2003) and may not be generalized directly to transition economies (Arnold & Quelch, 1998; Ju & Zhao 2009; London & Hart, 2004). Hence, findings of this study enhance the existing HR slack literature in the context of the developing countries.

This study is about HR slack-firm performance in the largest developing economy in the World. Chinese economy is distinct from the developed economies. Therefore, findings of previous studies cannot generalize without a comprehensive study about HR slack in a developing economy. To the best of our knowledge, no comprehensive study addresses about effects of HR slack in absolute and relative terms on firm performance in a transitional economy. Moreover, most of the studies have carried out about financial slack in transitional economies, such as China (Tan & Peng, 2003; Ju & Zhao, 2009; Peng, 2003; Quer, Claver & Rienda, 2007; Wrigh, FilatotChe, Hoskissio & Peng, 2005). It is essential to recognize that different types of resource slacks are not equivalent because different types of resources posse unique characteristics that can improve the flexibility of firms, which they deploy these resources. One characteristic of the resource slack is the degree of discretion associated with the resources, and it is called resource 'stickiness' (Penrose, 1959). Therefore, the relationships of financial slacks and firm performance cannot be generalized to HR slack. Hence, findings of this study enhance the literature and understanding about HR slack in a context of developing economy.

Emerging economies are under-developed, no strong pressures for firms to be efficient and redundant slack resources to enable for gaining the high efficiency (Khanna & Palepu, 1997; 2000). Tsai (2008) points out that state hold significant stake and government of China has a much greater influence on business than developed counties. Furthermore, to comply with the government policy, politically-connected CEOs recruit extra staff. As a result of that, firm will perform poorly (Fan et al. 2007). This is less prevalent in Chinese POEs. Further, this kind of conflict seldom arises in the developed countries, but it is common in China.

In this research, we investigate how ownership types moderate the HR slack-firm performance relationship? We propose the effect of HR slack on firm performance vary depending on ownership due to the fact that different ownership types face

different institutional backgrounds, constraints, and advantages (Shenker & Von Glinow, 1994). Firms having various ownership types are likely to make different resource allocation decisions and have different efficiency of resource utilizations. Furthermore, different ownership group posse's heterogeneous institutional advantages and disadvantages according to different resource decision behavior (Boisot & Child, 1996; George, 2005; Tan & Peng, 2003). Organization slack theory provides valuable insights on how ownership types interact with slack resources to affect performance attainment (Ju & Zhao, 2009). Therefore, this study will extend the existing literature by examining whether the HR slack-performance relationship varies with the ownership types.

Our main hypothesis is both absolute and relative HR slacks lead to increase the firm performance up to a certain level, thereafter firm performance will be declined (Curvilinear relationship). The remainder of the paper is organized as follows. Section 2 provides literature review. Section 3 outlines methodology followed by a description of the empirical data and analysis in Section 4. Section 5 presents the results and discussion. Finally, section 6 offers conclusions.

2. Literature review

Organizational slack is defined as a "collection of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output" (Mellahi & Wilkinson, 2010; Nohria & Gulati, 1996: 1246). Organizational slack acts as a buffer which facilitates firms to adjust their strategies in order to get adapted to the environment (Bourgeois, 1981). According to the organization theorists, slack resources despite the costs, strengthen firm's technical core, enhance firm performance (Cyert & Much, 1963; Pfeffer, & Salancik, 1986; Thompson, 1976).

Agency theory explicitly rejects the organization theorist's argument about slack resources. Agency theorists view firm as an independent legal entity and there are conflicting objectives between principals and agents (Fama, 1980). They argue that maintaining a resource-slack will only be beneficial for managers acting as agents (Jensen & Mackling, 1976), and they may use slack resources to implement excessive investment or negative worth projects (Tan & Peng, 2003). They claim that slack resources lead to an agency problem, cause low efficiency, inhibit risk-taking, and reduce the firm performance (Jensen & Mackling, 1976). Therefore, findings of the researches about the linkage between different type of slack resources and firm performance are inconsistent (Peng, 2003), which means that re-investigating of organization slack will have additional valuable theoretical contributions and practical implications (Pang, Shen & Li, 2011). In this study, we

examine HR slack which gives more useful theoretical contributions and practical implications in developing economies.

The emergence of HR slack is explained by the process of learning how to make current operation more effectively (Goerzen & Beamish, 2007). HR slack is also arising from the efficiency gains and the firm may use that for further expansion, drive the growth (Kor & Mahoney, 2000) or buffering to cope with external shocks. Some scholars argue that HR slack may obstruct firm performance; especially, HR slack associated with political motivation and cognitive inertia (Hannan & Freeman, 1989). HR slack does not positively related to the performance in some industries or industry segments where they may require new skills or expert knowledge. Based on behavior theory, other scholars propose a positive relationship between slack resources and firm performance (George, 2005; Kim et al., 2008). Recent empirical studies investigate the relationship between HR slack and firm performance which finds a negative relationship (Mishina et al., 2004; Voss et al., 2008). All the studies conducted using data from developed countries. Hence, findings and their recommendations cannot be generalized into a developing or transitional country.

Resource-based theorists identify HR slack is as an absolute quantity and amounts of HR slack change with the level of excess employees in an organization process over the time (Bourgeois, 1981). On the other hand, HR slack of a firm's can compare with the industry average (relative to rival firms) and some firms possess more HR slack than the average of its industry peers (Marino & Lange, 2003). Based on the argument of Love and Nohira (2005), we classify the HR slack into two groups, namely absolute and relative HR slacks.

2.1. Absolute human resource slack and firm performance

Human learning curve describes different cycles in the learning curve and continuously generates excess HR that is available in the process of learning how to conduct current operation more efficiently (Kor & Mahoney, 2000). Various empirical studies support for the argument (Argote & Epple, 1990; Li & Rajagopala, 1998; Yelle, 1979; Wiersma, 2007). These studies find that the fewer workers use to produce the same amount of output due to improvement in a firm's productivity levels, which resulted in excess HRs. Absolute human resource slack (AHRS) may have immediate performance effects leading to over-working of existing HR (Love & Nohira, 2005).

Firms can deal with the excess HRs in three ways: (1) downsize; (2) retain the access HR; (3) increase production. Downsizing reduces HR slack and makes an attempt to improve performance (Cheng & Kesner, 1997). However, continuous downsizing shows a negative effect on performance (Cascio & Young, 2003; Chadwick, et al., 2004; De Meuse, et al., 1994; Hallock, 1998; Lawson, 2001;

Worrell et al., 1991). As a result of downsizing, survivors work in an unsustainable position and a high risk of over-work (Love & Nohira, 2005), and they become low morale, less productive, distrust management and work with excessively cautious (Rice & Dreilinger, 1991). Hence, downsizing will negatively affect performance in long-term compared to other alternatives (Cascio, 1993, 2002; Harari, 1992).

Entrepreneur theorists argue that highly ambitious managers motivated to use slack resources to expand their business into new market or product positioning for getting more revenue over the additional cost (Pitelis, 2007). Entrepreneurial managers get incentives for occupying slack resources (Mishina et al., 2004) and deploy HR slack to respond environment turbulence, and able exploit market opportunities (Cheng & Kesner, 1997). Firms with higher HR endowment utilize HR slack for obtaining competitive advantage because it is difficult for competitors to obtain the same resource configurations and copy the firm's strategy (Mishina et al., 2004). Scholars argue that "there is an optimal level of slack" for any given firm. If firm exceeds that level, performance goes down (Sharfman et al., 1988). This shows a curvilinear relationship.

2.2. Relative human resource slack and firm performance

A high level of relative slack reveals that a firm possesses more slack resources than the average of the firm's proximate competitors or industry peers (Marino & Lang, 1983). Difference between amount of firm HR slack and industry average (rival firms) is call relative HR slack (RHRS). RHRS has two advantages when firms expand their business against their rival firms with low level of RHRS: (1) available resources within the firm alleviate various managerial problems which relate to firm performance and growth (Covin & Slevin, 1997; Gartner, 1997; Hanbrick & Corizier, 1985). Firms with HR slack need to employee only fewer new managers (and skilled-employees) than firms without HR slack. As firm already with HR slack, managers have firm-specific knowledge to cope with performance than newly recruited managers (McKinley, 1987). Hence, presence of RHRS shields the problem of deterioration of effective managerial control over expending administrative process. It reduces the number of new recruitments which lead to cost saving, and enhance the performance; (2) Firms dispose of the capacity needed to select and integrate new manager (and skill employees); newly recruited employees do not converse about past technical claims, and existing managers need to train and integrate them. The managers occupy their time and effort, and consequently divert their attention for the operations of the firm (Bourgeois & Singh, 1983). Furthermore, existing managers require assuring the quality of newly recruited employees, and they have to transfer tacit knowledge to them (Faith, Higgins, & Tollison, 1984; Levinthal, 1988). All these facts supported that RHRS positively affect the firm performance while it acts as a cushion.

A firm with low level of human resource slack which is resulted due to the disposal of RHRS and this process is refers as "fat" (Caves & Krepps, 1993); they are assumed to be inefficient as firm's necessary outputs produced by fewer employees than currently employed (Love & Nohira, 2005). More RHRS viewed to be as an additional cost and reduction of it is desirable (Voss et al., 2008). However, Majumdar (1998) observed that disposal of RHRS does not significantly affect efficiency, and he finds that RHRS keeps with firm is also equally efficient. Hence, there is no solid answer whether firm keeps or disposals the RHRS.

RHRS is tied up with the current operation of the firms. Hence, redundancy is extremely expensive and undesirable (Voss, et al., 2008). Further, structural constraints limit the possibility to identify and recover RHRS. The relative resource slack is extremely difficult to reduce, as it difficult to identify, and a reduction causes unexpected numerous expenses (Love & Nohria, 2005). The structural constraints accompanied relative slacks inhabit implementation of expensive and innovative strategies and impose pressure to reduce the slack (Voss et al., 2008). Especially, high level of RHRS does not motivate firm expansion and it leads to shedding resources (Pitelis, 2007). Firm already possesses excess-unused productive resources (in this instance 'people'), since their firm growth is insufficient to consume RHRS. As HRS add-up to the existing level of unproductive resources, the negative performance effect resulting from leaving slack unproductive may be aggravated. Alternatively, firm may be inclined to downsize to reduce the high level of resource slack, and then give a negative performance.

Some scholars argue that the impact of slack on firm performance is curvilinear. Then, RHRS may have curvilinear relationship with firm performance.

2.3. Effect of firm ownership on absolute and relative human resources slacks

Ownership types represent the institutional framework which reflects organizational diversity during dynamic and uncertain institutional transitions (Peng et al., 2004; Tan, 2002). Most previous studies on organizational slack and firm performance focus only on one type of ownership (Peng, 2003) and firms in China belong to mainly two ownership types; SOEs and POEs. These types of ownership expose firms to different institutional constraints and advantages (Gao, Murray, Kotabe, & Lu, 2010; Peng et. al., 2004; Shenkar & Von Glinow, 1994; Ju & Zhao, 2009).

SOEs have relatively similar organization structure and process in China; they are large and complex in comparison to POEs, and have various types of surplus resources (Peng et al., 2004) including cash, raw material, and HRs (Tan, 2003). Government helps to accumulate plenty of resources; however, major problem of the SOEs is related to inefficiencies in resource utilization (Li & Zhang, 2007; Peng, et al. 2004; Tan, 2002). Shleifer and Vishney (1994) noted that state SOEs are encouraged

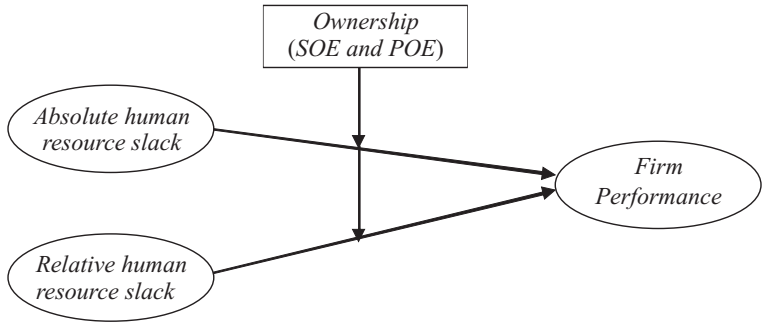
to employ more staff than they actually needed. In addition, state-assigned managers act in the interest of the politicians who control them and they do not work in the best interest of the firms. Further, Fan et al. (2007) show that the listed Chinese firms tend to appoint politically-connected CEOs who try to solve the local unemployment problem. Hence, SOEs may have more HR slack compared to POEs.

In contract, POEs are young and operate in turbulence environment with tied budgetary controls and highly competitive markets (Perkins, 1994). POEs are quite hostile in the institutional environment in China due to lack of well-codified law, official rules and regulations, and commercial conventions (Ahlstrom & Bruton, 2001). POEs have limited access to resources, and the government does not give high priority to POEs (Tan, 2002). Therefore, POEs should be more efficient and effective in utilization of resources (Perkins, 1994). Absorbed resource slack causes resource constraints in POEs that weaken the firms' adoptive responses to business opportunities, decrease firm flexibility, and decline the performance (Tan, 2002). On the other hand, available unabsorbed slack in POEs help improve firm performance (Ju & Zhao, 2009).

3. Methodology

We present the conceptual model in Figure 1.

Figure 1: Conceptual model



Source: Author's research

3.1. Variable measurements

Numerous measures of slack resource are suggested by scholars, and the choice of an appropriate and operational measurement is most difficult and hot debated

subject (Mishina et al., 2004). There are two widely considered arguments; first, slack is a quantity, which is relative to a target resource level, not an absolute amount of resources (Bromiley, 1991; March & Shapira, 1987; Miller & Leiblein, 1996); second, amount of slack resource changes over time and the level of slack resource in a firm can be measured at a given point of time (Bourgeois & Singh, 1983; Marino & Lange, 1983; Moses, 1992). We select the measurement of HR slack that satisfies both arguments.

Scholars accept that the employee productivity is commonly being used as a proxy for measuring HR slack (Greenly & Oktemgil, 1998; Datta, Guthrie & Wright, 2005; Huselid, 1995; Koch & McGrath, 1995; Kroll, 2006; Mishina, et al., 2004; Welbourne, Neck, & Meyer, 1999). Revenue per employee is used to measure employee productivity by assessing how effectively employees generate operating income (Kroll, 2006). This is measured by dividing total sales by the number of employees, which has widely used in many empirical researches (Datta, Guthrie & Wright, 2005; Huselid, 1995; Koch & McGrath, 1995). AHRS measures the change in employee productivity within the organization over time. We measure the AHRS using the approach suggested by Kroll (2006). We measure absolute human resource slack (AHRS) of i^{th} firm at t^{th} year as follows:

$$AHRS_{it} = \{[(S_{it}) / (E_{it})] / [(S_{i(t-1)}) / (E_{i(t-1)})]\} - 1 \quad (1)$$

Where S_{it} is firm i^{th} total sale at the time of t and E_{it} is i^{th} firm's total number of employees at the time of t. t-1 refers to previous year.

RHRS measures a firm's HR slack relative to an industry target level, and it does not evolve over time. RHRS quantifies the HR slack relative to an industry target level (Bourgeois and Singh, 1983), and it compares the firm's employee productivity with their respective industry level's employee productivity (Mishina et al., 2004). We measure the RHRS using the approach suggested by Miller and Leiblem (1996) and we use the industry classification, which delineates by the China Security Regulatory Commission (CSRC). We measure relative human resource slack (AHRS) of i^{th} firm at t^{th} year as follows:

$$RHRS_{it} = [(IS_{it}) / (IE_{it})] - [(S_{it}) / (E_{it})] \quad (2)$$

Where S_{it} is firm i^{th} total sale at the time of t and E_{it} is i^{th} firm's total number of employees at the time of t. IS_{it} is the total sale of industry which is belonged to firm i^{th} and IE_{it} is total number of employees of the industry, which is belonged to firm i^{th}.

Ownership type (OWN) is measured by a dummy variable; if the largest controlling shareholder is the government, 1 used and 0 otherwise (private-owned) (Wu & Pangakar, 2010; Wu, Xu, & Phan, 2011).

We use firm age, size, debt ratio (DEBT), industry type and year dummy as control variables. We measure the firm size (SIZE) in terms of the logarithm of total assets, while age (AGE) is measured as the number of years since inception. Industry type (IND) is measured by categorical variables that represent all industry classifications in accordance with CSRC. Scholars note that firm age, size, industry types (Peng, 2003; Tan & Peng, 2003; Pang, Shen & Li, 2011; Markman & Gartner, 2002; Mishina et al. 2004) and debt ratio (Ju & Zhao, 2009) are decisive factors that influence firm performance. Firm size is likely to relate human resource slack (George, 2005; Lover & Nohira, 2005). The nature of the industry and level of turbulence complexity affect how much slack resource the firm will insulate with them or to grab the opportunities in the industry (Aldrich, 1979) and slacks correlate differently with the performance in a variety of industries (Miller et al., 1996). We control industry and year fixed effects, but we do not report them with the results.

Following Bromiley (1991), Pang, et al. (2011), Su et al. (2009), Tan and Peng (2003) and Zhang (2006), we use accounting-based performance measure; Return on Investment (ROI).

3.2. Conception of analysis

We use the longitudinal data and investigate firm performance implication of HR slack in absolute and relative terms. The equation estimated for the linear relation between Absolute HR Slack (AHRS) and firm performance (ROI) is specified as follows:

$$ROI_{i,t} = \alpha + \sum_{j=1}^{4} \beta_j FC_{j,i,(t-1)} + \beta_5 AHRS_{i,t} + \beta_6 AHRC_{i,t} \times OWN_{1,t} + \varepsilon_{1,t} \quad (3)$$

The equation estimated for the linear relation between Relative HR Slack (RHRS) and firm performance (ROI) is specified as follows:

$$ROI_{i,t} = \alpha + \sum_{j=1}^{4} \beta_j FC_{j,i,(t-1)} + \beta_7 RHRS_{i,t} + \beta_6 RHRC_{i,t} \times OWN_{1,t} + \varepsilon_{1,t} \quad (4)$$

The equation estimated for the curvilinear relation between Absolute HR Slack (AHRS) and firm performance (ROI) is specified as follows:

$$ROI_{i,t} = \alpha + \sum_{j=1}^{4} \beta_j FC_{j,i,(t-1)} + \beta_5 AHRS_{i,t} + \beta_9 RHRS_{i,t}^2 + \varepsilon_{1,t} \quad (5)$$

The equation estimated for the curvilinear relation between Relative HR Slack (RHRS) and firm performance (ROI) is specified as follows:

$$ROI_{i,t} = \alpha + \sum_{j=1}^{4} \beta_j FC_{j,i,(t-1)} + \beta_{7,j} RHRS_{i,t} + \beta_{10} RHRS_{i,t}^2 + \varepsilon_{1,t} \quad (6)$$

Where the vector of FC variables contains the control (AGE, SIZE, DEBT and OWN) variables used to capture the effect of firm characteristics with a vector (J_{1-4}) of $\hat{a}_{1-4}$ coefficients (year and industry dummies are not reported); other vectors of AHRS, RHRS variables contains the explanatory variables with vectors of $\hat{a}_{5-10}$ coefficients. The estimated model in which i denotes firm, t stands for a year and $\varepsilon_{i,t}$ represents the error term.

4. Empirical data and analysis

All Chinese listed non-financial companies (except financial industry code – I) found in the China Stock Market & Accounting Research (CSMAR) database from 2000–2009 are used in this study. Both foreign listed Chinese companies and listed in Hong Kong stock market and firms with missing data were excluded from the sample. The final sample (an unbalance panel firms) consists of 11985 firm-year observations.

We use the longitudinal data and investigate firm performance implication of HR slack in absolute and relative terms. The ordinary least squares (OLS) model to estimate panel data can result in biased due to unobserved heterogeneity (Greene, 2000). Hence, we used generalized linear models (GLMs) for hypotheses testing. GLS model transforms original variables to satisfy the standard least-square assumptions and modified emergence of heteroscedasticity and autocorrelation problems in time series data (Gujarati, 2004). We calculate variance inflation factor (VIF). We checked for multicollinearity problem; VIF derived from OLS regression. The VIFs range from 1.06 to 2.40. Hence, multicollinearity is unlikely to be a serious problem in this study.

5. Result and discussion

5.1. Results

Table 1 shows the descriptive statistics for overall, SOEs, and POEs samples. The correlation results support that AHRS has a positive relationship to the firm performance while RHRS has a negative relationship. Hence, the results provide

some primary evidence for supporting the hypothesis. Correlations among all the variables are less than 0.5, and correlation between firms' debts ratio and performance shows the highest values (0.411– overall, 0.3604 – SOEs, and 0.4916 – POEs) in all samples. However, descriptive statistics alone are not adequate to explain a firm's HR slacks affect performance more dramatically.

Table 1: Descriptive statistics and correlation matrix.

Variables [a]	Mean	S.D.	ROI	1	2	3	4	5	6
Overall sample (n= 11986)									
Performance (ROI)	0.017	0.095	1						
1 Firm age	9.935	4.187	-0.1028*	1					
2 Firm size [b]	21.235	1.003	0.2532*	0.0468*	1				
3 Debt ratio	0.238	0.169	-0.4113*	0.1165*	0.0078	1			
4 Ownership	0.678	0.467	0.0403*	-0.1198*	0.1786*	-0.0679*	1		
5 Absolute human resource slack	0.264	0.945	0.0820*	0.0109	-0.0489*	-0.0089	-0.0205*	1	
6 Relative human resource slack	-6.263	3.432	-0.0831*	-0.0635*	-0.1849*	0.0271*	-0.0152	-0.1824*	1
SOE sample (n= 8130)									
Performance (ROI)	.0209	0.075	1						
1 Firm age	9.583	4.086	-0.109*	1					
2 Firm size	21.362	0.984	0.2296*	0.101*	1				
3 Debt ratio	0.229	0.153	-0.3604*	0.1016*	0.0892*	1			
5 Absolute human resource slack	0.238	0.768	0.0913*	-0.0033	-0.0316*	-0.0051		1	
6 Relative human resource slack	-5.473	3.021	-0.097*	-0.0593*	-0.1961*	0.0235*		-0.1928*	1
POE sample (n= 3856)									
Performance (ROI)	-0.001	0.195	1						
1 Firm age	10.67	4.213	-0.0836*	1					
2 Firm size	20.963	1.001	0.303*	0.0011	1				
3 Debt ratio	0.264	0.231	-0.4916*	0.1251*	-0.1573*	1			
5 Absolute human resource slack	.331	1.368	0.0702*	0.025	-0.0745*	-0.0137		1	
6 Relative human resource slack	-7.351	3.957	-0.0583*	-0.0786*	-0.1647*	0.0363*		-0.1579*	1

Note: Correlations are significant at $p<0.05$, which denotes as *. Year and industry dummy are not reported.

Source: Author's calculation

The regressions results summarized in Table 2 and 3. Both Tables show the relationships between AHRS and RHRS with firm performance respectively. Two tables include three samples: (1) overall, (2) SOEs, and (3) POEs. We added ownership variable in the overall sample. It helps test the type of ownership effect on performance in the presence of HR slack. We include interaction of ownership and HR slack to test the moderating effect on performance.

Model 3 of the Table 2 shows a significant-positive relationship between AHRS and firm performance ($P < 0.001$). According to the Model 5 and 7, the relationships between AHRS and firm performance ($P < 0.001$) are significantly positive in both SOEs and POEs.

In the presence of AHRS, we observed that state-ownership is negatively ($\beta = -0.011$, $p < 0.001$) affected firm performance in Model 2 and 3 respectively. It reveals that state-owned firms lead to negative performance even though it has HR slacks. Further, we included interaction variable in Model 3, which confirmed that ownership ($\beta = -0.0019$) is negatively moderate the AHRS and firm performance. State-ownership (SOE) shows a negative impact on relationship between AHRS and firm performance. Hence, POE ownership shows a positive impact on relationship between AHRS and firm performance. Moreover, the relationship between AHRS and performance of POEs slightly better than SOEs; however, there is no significant difference between them. Firm size affects ($p < 0.001$) performance positively in all three samples. Firm's age affects ($p < 0.001$) performance negatively in overall and SOE samples, although it is not significant in POE sample. Firm leverage (Debt ratio) has significantly ($p < 0.001$) negative impact on performance.

Table 2: Regression analysis of absolute human resource slack and firm performance

Variables	Overall sample						SOE sample				POE sample			
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model7	
Constant	-0.4312***	(0.0191)	-0.4473***	(0.0193)	-0.4504***	(0.0181)	-0.3570***	(0.018)	-0.3641***	(0.0179)	-0.8017***	(0.0634)	-0.8498***	(0.0658)
Firm age	-0.0014***	(0.0002)	-0.0134***	(0.0018)	-0.0015***	(0.0002)	-0.0015***	(0.0002)	-0.0015***	(0.0002)	-0.0006	(0.0007)	-0.0008	(0.0007)
Firm size	0.0239***	(0.0008)	0.0249***	(0.0008)	0.0252***	(0.0008)	0.0201***	(0.0007)	0.0202***	(0.0007)	0.0450***	(0.0027)	0.0461***	(0.0027)
Debt ratio	-0.2281***	(0.0046)	-0.2294***	(0.0046)	-0.2291***	(0.0046)	-0.1821***	(0.0049)	-0.1814***	(0.0048)	-0.3803***	(0.0119)	-0.3777***	(0.0118)
Ownership			-0.0108***	(0.0017)	-0.0099***	(0.0017)								
Ownership x AHRS					-0.0019	(0.0016)								
Absolute human resource slack (AHRS)					0.0102***	(0.0012)			0.0094***	(0.001)			0.0117***	(0.0019)
Log-likelihood	12866.83		12883.43		12952.81		10617.37		10665.72		1524.26		1542.13	
Wald Chi^2	4048.06***		4103.75***		4280.22***		2417.49***		2543.68***		1703.10***		1754.24***	

Note: + denotes significant at 0.1, * for significance at 0.05, ** for significance at 0.01, and *** for significance at 0.001. Standard errors are in parentheses.

Source: Author's calculation

Model 10 of Table 3 shows a significant negative relationship between RHRS and firm performance ($P < 0.01$). The relationship between RHRS and firm performance ($P < 0.001$) is negatively significant in the SOE sample. However, the relationship is negative and does not significant in the POE samples.

When including ownership type, we observed that ownership is negatively affected firm performance in Model 9 ($\beta = -0.0108$, $p < 0.001$). We also observed that ownership is negatively affected firm performance in Model 10 ($\beta = -0.0105$, $p < 0.001$) in the presence of RHRS. It supports that state-owned firms lead to negative performance even in the presence of HR slack. Further, we include interaction variable in Model 10, which confirmed that ownership is positively and significantly moderated the relationship between the RHRS and firm performance. Moreover, SOE is negatively moderated the relationships between RHRS and firm performance. POE shows a negative non-significant impact on relationship between RHRS and firm performance. The relationship between RHRS and performance of SOEs is more-negative than POEs (steeper negative slope). Firm size affects ($p < 0.001$) performance positively in all three samples. Firm age is significantly ($p < 0.001$) negative in overall and SOE samples, although it is not significant in POE sample. Debt ratio is negatively significant in Model 8-14.

Table 3: Regression analysis of relative human resource slack and firm performance

Variables	Overall sample						SOE sample				POE sample			
	Model 8		Model 9		Model 10		Model 11		Model 12		Model 13		Model 14	
Constant	-0.4312***	(0.0191)	-0.4473***	(0.0193)	-0.4094***	(0.0186)	-0.3570***	(0.0180)	-0.3410***	(0.0182)	-0.8017***	(0.0634)	-0.8186***	(0.0644)
Firm age	-0.0014***	(0.0002)	-0.0134***	(0.0018)	-0.0015***	(0.0002)	-0.0015***	(0.0002)	-0.0015***	(0.0002)	-0.0006	(0.0007)	-0.0007	(0.0007)
Firm size	0.0239***	(0.0008)	0.0249***	(0.0008)	0.0242***	(0.0008)	0.0201***	(0.0007)	0.0193***	(0.0008)	0.0450***	(0.0027)	0.0448***	(0.0027)
Debt ratio	-0.2281***	(0.0046)	-0.2294***	(0.0046)	-0.2293***	(0.0046)	-0.1821***	(0.0049)	-0.1807***	(0.0048)	-0.3803***	(0.0119)	-0.3802***	(0.0119)
Ownership			-0.0108***	(0.0017)	-0.0105***	(0.0017)								
Ownership x RHRS					-0.0013***	(0.0000)								
Relative human resource slack (RHRS)					-0.0003**	(0.0000)			-0.0012***	0.0000			-0.0005	(0.0000)
Log-likelihood	12866.83		12883.43		12922.23		10617.37		10629.07		1524.26		1524.34	
Wald Chi^2	4048.06***		4103.75***		4017.14***		2417.49***		2348.39***		1703.10***		1703.49***	

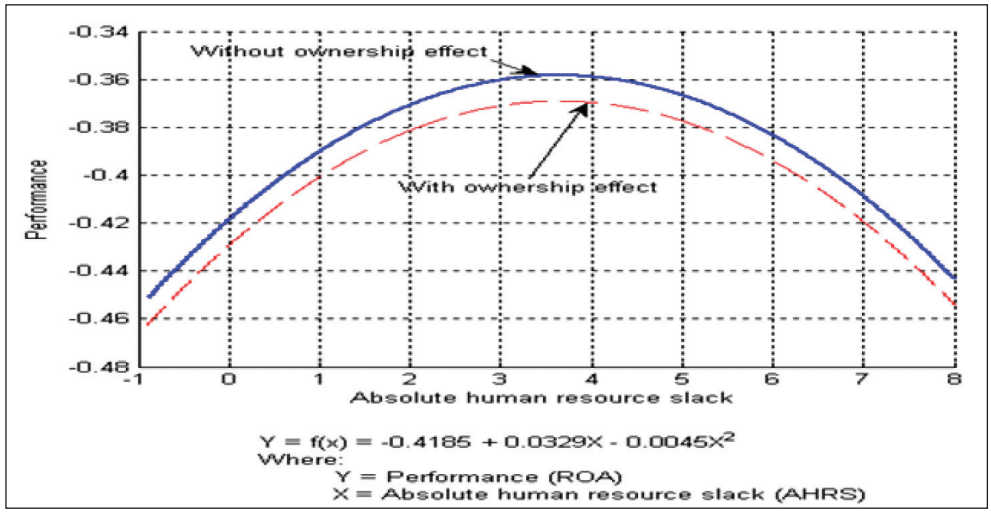
Note: + denotes significant at 0.1, * for significance at 0.05, ** for significance at 0.01, and *** for significance at 0.001. Standard errors are in parentheses.

Source: Author's calculation

To test the curvilinear relationship between HR slack and performance, we added squared terms in HR slack. Results show in section-A of the Table 4, which includes first-order and second-order effects of AHRS. The section-B of the Table 4 shows the same relationship for RHRS. According to the Table 4, first-order effect of AHRS shows a positive impact on firm performance; nevertheless, the second-order effect of AHRS shows a negative impact on firm performance in all samples. Hence, absolute human resource slack has a curvilinear relationship with performance. Furthermore, control variables have a significant effects as same as in Model 1-7.

Figure 2 shows the relationship between AHRS and performance. According to the Figure, there is an optimal level of AHRS. HR slack creates a competitive advantage up to a certain level; beyond the critical point, it becomes a value-destroying factor.

Figure 2: Relationship between absolute human resource slack and firm performance



Note: With ownership effect includes a dummy variable, 1 for government ownership.

Source: Author's research

Results shows in the section-B of the Table 4, which includes first-order effects of RHRS show a negative impact on the firm performance. The second-order effects of RHRS are negative in all samples. Hence, RHRS also has a curvilinear relationship with performance. Figure 3 shows the relationship between RHRS and performance.

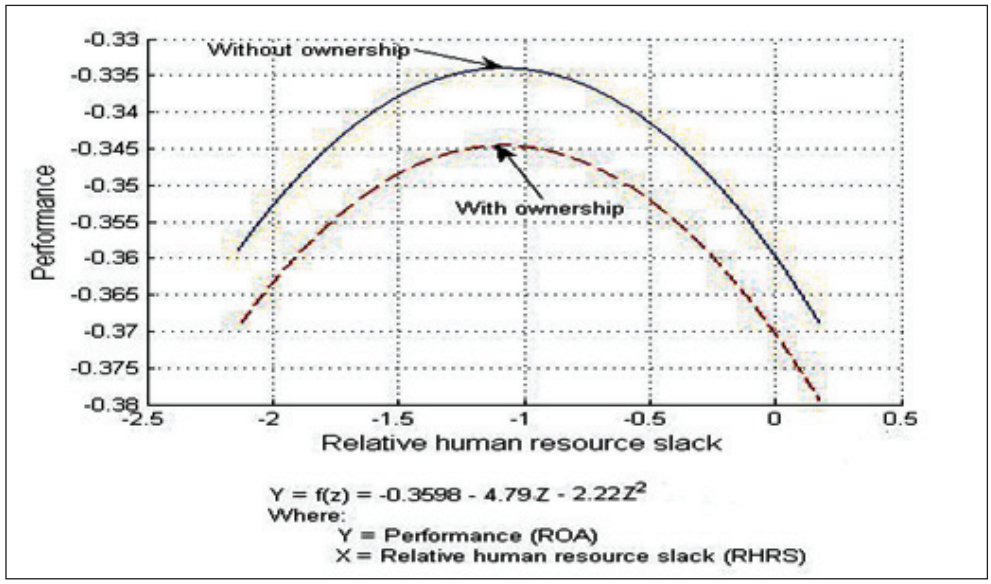
Table 4: Regression analysis for test the curvilinear relationship between human resource slack and firm performance

Variable	Section A: Absolute Human Resource Slack (AHRS)						Section B: Relative Human Resource Slack (RHRS)					
	Model 15- Overall Sample		Model 16- SOE Sample		Model 17- POE Sample		Model 18- Overall Sample		Model 19- SOE Sample		Model 20- POE Sample	
Constant	-0.4186***	(0.0182)	-0.3569***	(0.0177)	-0.8353***	(0.0633)	-0.3598***	(0.0186)	-0.3264***	(0.0184)	-0.8096***	(0.0648)
Firm age	-0.0015***	(0.0002)	-0.0014***	(0.0002)	-0.0007***	(0.0001)	-0.0014***	(0.0002)	-0.0014***	(0.0002)	-0.0007***	(0.0001)
Firm size	0.0245***	(0.0008)	0.0197***	(0.0007)	0.0450***	(0.0022)	0.0234***	(0.0008)	0.0185***	(0.0008)	0.0443***	(0.0027)
Debt ratio	-0.2263***	(0.0045)	-0.1805***	(0.0048)	-0.3725***	(0.0118)	-0.2278***	(0.0045)	-0.1791***	(0.0049)	-0.3795***	(0.0119)
Ownership	-0.0107***	(0.0016)					-0.0106***	(0.0016)				
AHRS	0.0329***	(0.0018)	0.0329***	(0.0020)	0.0370***	(0.0048)						
$AHRS^2$	-0.0045***	(0.0003)	-0.0058***	(0.0004)	-0.0031***	(0.0005)						
RHRS							-0.0048***	(0.0000)	-0.0046***	(0.0000)	-0.0031	(0.0000)
$RHRS^2$							-0.0002***	(0.0000)	-0.0002***	(0.0000)	-0.0001	(0.0000)
Log-likelihood	13059.00		10754.82		1558.72		12893.27		10643.71		1525.22	
Wald Chi^2	4570.75***		2780.24***		1803.35***		4087.30***		2452.10***		1701.14***	

Note: + denotes significant at 0.1, * for significance at 0.05, ** for significance at 0.01, and *** for significance at 0.001. Standard errors are in parentheses.

Source: Author's calculation

Figure 3: Relationship between relative human resource slack and firm performance



Note: With ownership effect includes a dummy variable, 1 for government ownership.

Source: Author's research

5.2. Discussion

This study contributes to the slack resource–firm performance literature by examining the relevance of absolute and relative HR slacks as indispensable sources of firm performance. Most previous studies have frequently focused on financial slack and firm performance. However, few studies have investigated HR slack in developed economies such as US, Europe and Japan. In this study, we investigate direct impact of HR slack in absolute and relative terms on firm performance. Further, we investigate moderating effect of ownership type on relationship between HR slack and performance in a developing country. We developed simple framework, which helps us advance in strategic research from a developing country by addressing a complex, important, and previously underexplored question. Furthermore, we advocate and enrich a contingency perspective focusing on ownership effect in the context of China, which provides better ground for testing the hypothesis.

Our findings suggest that (1) AHRS leads to improve the firm performance in China, (2) AHRS and RHRS show positive and negative effects on performance respectively, (3) RHRS slack has significant negative impact on performance of SOE and it is not significant in POE performance, and (4) Ownership type negatively moderate relationship between HR slack and firm performance in

China. The results suggest that the AHRS and RHRS have a distinct relationship with firm performance. Especially, we find that the AHRS has a positive impact on performance up to a certain level. Thereafter, positive performance has decreased., In contrast, RHRS shows a negative impact on performance initially and negative performance has been reduced up to a certain level, Thereafter, negative performance has increased. Hence, we observed that AHRS and RHRS have inverse U-shaped effects on the firm performance in China. We will explore these insights and their implications for theories in business and managerial practice.

Resource-based theorists argue that AHRS aggravates firm performance and induces the firm to grow (Pitelis, 2007). There is a lack of empirical research for supporting or to get rid of from this argument. Findings of this research help reduce this research gap in some extent. We found that AHRS enhance the firm performance up to the certain level; beyond that limit AHRS distorts firm performance. This result suggests firms should keep optimum level of employees. Further recruitment of employees reduces the firm performance due to increasing cost of HR functions such as recruitment, training and development, compensation, and agency problem. This result also supports that unproductive HR slack within the firm which can cause the principal-agent problem; raise inefficacy, inhibit risk taking and agent-agent problem: increase conflicts between mangers/ co-workers, which lead to decrease performance. Hence, this finding also supports agency theory argument for slack resources.

High level of RHRS denotes that the firm used more HR to produce the same amount of outputs (products or services) than its proximate competitors or industry rivals. Then, it signals that firm does not produce outputs as efficiently as it can do. Hence, high amount of RHRS reduces the profit of a firm and have to keep low amount of RHRS, which is in line with our findings about RHRS. Firm with lower productivity than their proximate competitors (industry rivals) can downsize to improve productivity. In contrast, if firm does not use AHRS in an effective manner, firm could experience a significant negative performance. Hence, downsizing should be limited to an optimum level of (peak point of the figure 3) AHRS, which gives highest firm performance. Further downsizing could inhibit firm performance. Therefore, management of the firm has to maintain proper balance between AHRS and RHRS. The result suggests that there may be a harmonize level, which is the peak point of AHRS or RHRS, which comes first. It is an optimum level of HR for best firm performance within their respective industry.

Some scholars point out that the existence of excess resources has a positive impact on firm performance (Bromiley, 1991; Miller & Leiblein, 1996; Pfeffer and Salancik, 1986; Thompson, 1967). Others believe that there is an optimal level of slack (Love & Nohria, 2005; Tan & Peng, 2003; Tan, 2003), and relationship between amount of slack and performance is an inverted U-shaped (Love & Nohria, 2005; Tan and Peng, 2003; Tan, 2003; Pang, et al., 2011). Similarly, the

finding suggest that both little and too much AHRS are negatively related to firm performance. Further, our finding suggest that high amount RHRS has negatively affect performance, as a firm is not efficient to compete with its proximate competitors / industry rivals. In SOEs, the relationship between HR slack and firm performance is declined due to SOEs have higher inefficiencies in utilization of slack resources than POEs. In most circumstances, POEs may have less RHRS than their proximate SOEs. State-ownership relegates the relationship between HR slack and firm performance. Hence, mangers should be aware that different types of ownerships have a different impact on relationship between RHRS and firm performance.

6. Conclusions

The research results support our main hypothesis that "both absolute and relative HR slacks have curvilinear relationship with firm performance". Hence, AHRS and RHRS show inverse U-shaped relationship with firm performance in China. Because, HR slack creates a competitive advantage up to a certain level; beyond the critical point, it becomes a value-destroying factor. This study contributes to the existing economic and management literature by analyzing the effects of HR stacks on firm performance of SOEs and POEs in absolute and relative terms. To the best of our knowledge, this is the first empirical study that analyzes the effects of HR slack on firm performance of SOEs and POEs in a developing country. This research has two inherent limitations. First, this research focuses on two types of ownerships: SOE and POE and ignores the rich diversity in the organizational landscape in China, which include "hybrid" ownerships such as foreign-owned, joint stock, and venture capital backed firms within both SOEs and POEs. The relationship between HR slack and firm performance in "hybrid" firms remains for future study. Furthermore, this study may replicate in other developing countries to examine contextual robustness, and share some similarities in the institutional environment in future research.

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Utjecaj viška ljudskih resursa na rezultate poslovanja poduzeća: Dokaz iz zemlje u razvoju

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Sažetak

Cilj ovog rada je istražiti da li višak ljudskih resursa dovodi do poboljšanja rezultata poslovanja poduzeća i koji je utjecaj viška ljudskih resursa u apsolutnim i relativnim uvjetima na rezultate poslovanja u zemljama u razvoju. Također se ispituje kako vrsta vlasništva utječe na odnos viška ljudskih resursa i rezultate poslovanja. Longitudinalna baza podataka od 11.985 poduzeća analizirana je u periodu od 2000. – 2009. uz primjenu generalnih linearnih modela (GLM). Rezultati pokazuju da (1) apsolutan višak ljudskih resursa (AHRS) dovodi do poboljšanja rezultata poslovanja; (2) AHRS utječe pozitivno a relativan višak ljudskih resursa (RHRS) utječe negativno na rezultate poslovanja poduzeća; (3) i AHRS i RHRS imaju inverzni utjecaj u obliku slova U na rezultate poslovanja poduzeća; (4) AHRS utječe pozitivno na rezultate poslovanja i državnih i privatnih poduzeća, dok RHRS negativno utječe na rezultate poslovanja državnih poduzeća. Može se zaključiti da i apsolutan i relativan višak ljudskih resursa povećava rezultate poslovanja do određenog nivoa, a nakon toga se rezultati poslovanja smanjuju (Curvilinear relationship). Ovaj rad je izvoran u svom doprinosu literaturi koja proučava organizacijski višak zaposlenih i rezultate poslovanja istražujući važnost apsolutnog i relativnog viška ljudskih resursa kao nezamjenjive resurse.

Ključne riječi: *višak ljudskih resursa, rezultati poslovanja poduzeća, vlasništvo, Kina*

JEL klasifikacija: *L21; L25; M21*

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