



**THE ROLE OF RELATIONAL COORDINATION IN THE  
RELATIONSHIP BETWEEN HIGH-PERFORMANCE WORK  
SYSTEMS (HPWS) AND ORGANIZATIONAL PERFORMANCE**

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3 **THE ROLE OF RELATIONAL COORDINATION IN THE RELATIONSHIP**  
4 **BETWEEN HIGH PERFORMANCE WORK SYSTEMS (HPWS)**  
5 **AND ORGANIZATIONAL PERFORMANCE**  
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11 **Abstract**  
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13 This paper looks at the role relational coordination might play in understanding the relationship  
14 between high performance work systems (HPWS) and organizational performance. Research  
15 was conducted in a large financial services provider in Pakistan. Across 120 branches of the  
16 bank, data on relational coordination and on the practices making up HPWS was obtained from  
17 employees by means of a questionnaire survey. Data on branch-level performance was obtained  
18 independently of this, from the bank itself. Analysis shows relational coordination to be a  
19 mediating variable between HPWS and branch performance. Relational coordination is also a  
20 mediating variable for each of the three component parts of HPWS: ability-enhancing,  
21 motivation-enhancing and opportunity-enhancing HR practices. These results have important  
22 implications from two points of view. From the point of view of relational coordination, they  
23 show how the concept might apply in a previously under-researched sector, and also how  
24 relational coordination might act as a mediator for HR practices other than those aimed directly  
25 at enhancing employee opportunities. Breaking down HPWS into its component parts suggests  
26 that individual employee ability and motivation might also play a role. From the point of view of  
27 the HPWS-performance literature, relational coordination is revealed as a mediating variable.  
28 This suggests that the AMO (ability-motivation-opportunity) model needs to place greater  
29 emphasis on opportunity, and also that more account needs to be taken of the structural aspect of  
30 work—in particular, the degree of interdependence.  
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45 **Keywords:** relational coordination, HPWS, performance, AMO model, interdependence,  
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## Introduction

This paper brings together—and makes contributions to—two important areas of HR research. The first area is social relations at work and, in particular, the increasingly influential idea of ‘relational coordination’. Developed in the work of Gittell and others, relational coordination is defined as ‘a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration’ (Gittell, 2002a, p.301). Relational coordination has shown itself to be a powerful way of capturing the essence of social relationships in work situations, especially when work is characterized by high levels of interdependence. At the same time, it has been shown both that particular HR practices can serve as antecedents to relational coordination (eg Gittell, 2000) and that relational coordination can act as a predictor of organization-level performance outcomes (see eg Gittell, 2001).

These links immediately bring relational coordination into contact with the second important area of HR research: the relationship between high-performance work systems (HPWS) and organizational performance (for recent overviews, see Paauwe, 2009; Guest, 2011; Jiang, Lepak, Hu & Baer, 2012; Paauwe, Wright & Guest, 2013). Indeed, it could be argued that this is the issue that has, in the last twenty years or so, come to dominate the HR research agenda. As is widely recognised, the existence of an association between practice and performance proved quite straightforward to establish; the real issue, almost from the outset, was how to understand the precise form this association takes. Investigation has thus come to focus on the ‘black box’ of organizations (Boxall, Ang & Bartram, 2011; Boxall, Guthrie & Paauwe, 2016; Chowhan, 2016; Jiang, Takeuchi & Lepak, 2013, Purcell, Kinnie, Hutchinson, Rayton & Swart, 2003). In other words, while it can be observed both what goes into the box and what comes out of it, what needs to be explored is the process by which we get from one to the other.

Up to now, research on relational coordination has made only an implicit or indirect contribution to the understanding of this process. Our aim in the present paper is to develop this into a more explicit and direct contribution to these critical HR issues. Gittell, Weinberg, Pfefferle & Bishop (2008b, p.166; see also Gittell, 2006) have suggested that relational coordination *could* contribute to ‘an emerging relational perspective on high-performance work systems ... in contrast to a focus on individual human capital ... or on motivation and commitment ...’, and the present paper aims to show the form this contribution might take.

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3 More specifically, we address the question of the role that relational coordination might  
4 play as a mediating variable in the relationship between HPWS and organizational performance.  
5 This question is examined in the setting of a single large bank, providing financial services in  
6 Pakistan. This setting is characterized by a high degree of interdependence in the organization of  
7 work, and is thus one in which we might expect relational coordination to be significant. It is  
8 also operating in a sector in which HPWS have shown to be important, in terms both of  
9 managerial intent and of employee experience. The size and structure of bank mean that  
10 meaningful performance data could be gathered at the workplace or branch level, and this was  
11 analysed in conjunction with data on HPWS and relational coordination collected by a survey of  
12 individual employees.  
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20 The findings of the research represent important contributions to the two areas that we  
21 bring together in this paper. From the point of view of relational coordination, they show how  
22 this concept might apply in a previously under-researched sector, and also how it might act as a  
23 mediator not just for HR practices that are aimed directly at encouraging it, but also for generic  
24 HPWS or HR practices as a whole. Moreover, breaking down HPWS into their component parts  
25 suggests that individual employee ability and motivation might play a role in promoting  
26 relational coordination and, in turn, workplace performance. Looking at things from the point of  
27 view of the HPWS-performance literature, relational coordination is thus revealed as a mediating  
28 variable. This suggests that the AMO (ability-motivation-opportunity) model needs to place  
29 greater emphasis on opportunity, and also that more account needs to be taken of the structural  
30 aspect of work—in particular, the degree of interdependence.  
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39 The paper is structured as follows. Following this introduction, the conceptual background  
40 to the analysis is presented. This involves consideration of the idea of relational coordination  
41 and an examination of the most salient aspects of the HPWS-performance debate. The third  
42 main part of the paper deals with the design of our research and the methods we employed, and  
43 the findings of the research are presented in the fourth section. The fifth and final section of the  
44 paper provides a discussion of these findings, highlighting the contributions they make to an  
45 understanding of the conceptual issues raised in the literature review.  
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## Conceptual background

### *Relational coordination*

In the words of Gittell (2002a, p.301), ‘relational coordination is a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration’. From an organization’s point of view, the basic issue is how it coordinates its various functions or departments. This thus depends on two things: first, communication—its frequency, timeliness, accuracy and problem-solving orientation; and second, relationships, which in turn are based on shared knowledge, shared goals and mutual respect (see eg Gittell, 2002a, p.301). While these individual elements might be familiar ones, what is distinctive about relational coordination is the way in which these elements are brought together into a coherent package capable of aiding our understanding of the nature and effects of the coordination of work.

Using relational coordination also allows closer links to be made between the social aspects of coordination and the more technical or structural aspects of the organization of work. This is because the relationships found in relational coordination are those between work roles rather than between individual employees (see Gittell, Seidner & Wimbush, 2010). The need for effective relational coordination will thus be greater in settings where there is a high degree of interdependence in work processes, especially when these processes are uncertain and time-constrained (Gittell, 2000). These conditions can often be found in service sector settings, and evidence to support the idea of relational coordination has been found in such areas as flight departures and health and social care.

In the case of flight departures, Gittell (2001; see also Gittell, 2000) showed how relational coordination was essential to the organization of this key component of airline performance. Getting flights away on time involved as many as 12 different functions, these including the mechanics and re-fuellers needed to ensure the plane is in a physical state to fly; the gate agents and ticketing agents needed to ensure the passengers are on board and ready to go; the cabin cleaners and caterers needed for the comfort of passengers; and the pilots and flight attendants needed to get the plane off the ground. A number of airlines were examined, and, within each of them, the relationships between each one of the functions and each of the other functions were assessed on the basis of relational coordination. A positive link was found between the degree of relational coordination and flight departure performance, with the latter

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3 looked at in terms of both quality and cost. A particular concern in this case (Gittell, 2001) was  
4 the role played by supervisory spans of control. Contrary to any expectations engendered by  
5 'post bureaucratic' organization theories, a narrow span was found to be more effective than a  
6 wide one—a finding Gittell (2001) attributed to the closeness of the supervisory relationship that  
7 the narrow span allowed.  
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11 The ideas of relational coordination have also provided insights from studies carried out  
12 in the healthcare sector (Gittell, 2002b, 2008; Gittell, Fairfield ... & Zuckerman, 2000; Gittell,  
13 Weinberg, Bennet & Miller, 2008a; Noel, Lanham, Palmer, Leykhum & Parchman, 2013).  
14 Gittell (2002b) looked at the relations between the different functions needed to care for patients  
15 undergoing joint replacement surgery in acute hospitals: 'physicians, nurses, physical therapists,  
16 case managers, and social workers' (Gittell, 2002b, p.1412). Gittell et al. (2000) again  
17 demonstrated a positive relationship between relational coordination and the quality of care, but  
18 relational coordination was also looked at as the means through which other coordination  
19 mechanisms might have their effect (Gittell, 2002b). As expected, it was found to act in this way  
20 for the mechanisms of boundary spanning and team meetings, but also, more unexpectedly, for  
21 organizational routines as well. These routines, it was argued, were effective through  
22 complementing, rather than substituting for, the interactions captured by the idea of relational  
23 coordination. In addition, Gittell (2008) demonstrated how relational coordination could provide  
24 for the coping mechanisms that would allow organizations in the healthcare sector to be more  
25 resilient in response to the severe external pressures they faced.  
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37 We can thus see the strength and versatility of relational coordination as a means of  
38 understanding inter-functional relations, especially in settings where there is a high degree of  
39 interdependence in the work process. What is also clear is that relational coordination is  
40 positioned as an intermediary variable—as something having both antecedents and outcomes—  
41 and it is looking at it explicitly in this way that allows us to bring it together most fruitfully with  
42 the broader debates surrounding the links between HPWS and organizational performance.  
43 Turning first to antecedents, we can see, for example, how Gittell et al. (2008a) identified how,  
44 in a particular healthcare setting, relational coordination could act as a mediator between job  
45 design and certain measures of efficiency and quality. While this was fairly narrow in its focus,  
46 other research on relational coordination has examined how it might arise from broader systems  
47 of work organization. Gittell's (2000) study of flight departures identified a range of work  
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3 mechanisms and practices, which included the use of cross-functional liaison roles and the use of  
4 team working as a key selection criterion. A similar conclusion was reached on the basis of the  
5 research in healthcare, where, as we have seen, Gittell (2002b) showed how relational  
6 coordination could be seen as the means through which certain coordinating mechanisms were of  
7 impact at the level of the organization as a whole.  
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12 The outcomes of relational coordination have been expressed in terms of a variety of  
13 organizational performance measures. These can, in broad terms, be seen to arise from the  
14 better communication ties that relational coordination engenders between employees in different  
15 functional areas (Noel et al., 2013). Because relational coordination is established as a result of  
16 relationships based on shared goals, shared knowledge and mutual respect, and because it is  
17 backed by frequent, timely, accurate, and problem-solving flow of quality communication, it is  
18 argued that this gives employees the opportunity to employ organizational resources in a more  
19 effective manner (Gittell et al., 2010). Gittell et al.'s (2008b) study of nursing homes, although  
20 able to identify a link between relational coordination and job satisfaction, was in fact unable to  
21 establish this as the route through which relational coordination was of impact on broader  
22 quality outcomes. On the other hand, as we have already seen, the work in the healthcare sector  
23 established an association between relational coordination and a number of care-based outcomes  
24 (Gittell et al., 2000); while relational coordination in the organization of airlines' flight  
25 departures was found to be associated positively with quality and efficiency (Gittell, 2001).  
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36 As things stand, therefore, consideration of relational coordination in the context of the  
37 broader practice-performance debates has been restricted to looking at those HR practices with  
38 which relational coordination might be thought to have the most direct relationship. This is  
39 most strongly evident in Gittell et al.'s (2010) study of patient care. Picking up on the earlier  
40 study (Gittell, 2000), a number of work practices were identified that focused on developing  
41 relationships between employees—a specifically cross-functional approach to selection, conflict  
42 resolution, accountability in performance management, rewards, meetings and boundary  
43 spanning. The association between these practices and quality and efficiency outcomes was  
44 found to be mediated by relational coordination. These findings, argued Gittell et al. (2010), not  
45 only showed how formal practices could encourage the relationships that improve  
46 organizational performance, but 'articulate[d] a novel relational pathway through which high-  
47 performance work practices contribute to performance' (Gittell et al., 2010, p.503).  
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3 In the present paper we extend this to look at the part relational coordination might play  
4 in the relationship between organizational outcomes and HR systems or high performance work  
5 systems (HPWS) as a whole. In doing so, we are responding to the call made by Gittell et al.  
6 (2008b, p.166; see also Gittell, 2006) who argued that relation coordination could contribute to  
7 ‘an emerging relational perspective on high-performance work systems ... in contrast to a focus  
8 on individual human capital ... or on motivation and commitment ...’. In order to do this, and,  
9 in particular, to show how the present paper brings together relational coordination with the  
10 broader HPWS-performance debates, it is to developments in the latter area that we now turn.  
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### 19 ***Theorizing the HPWS--performance link***

20 Debates on the HPWS-performance link have been raging for over twenty years (for recent  
21 overviews, see Paauwe, 2009; Guest, 2011; Jiang et al., 2012; Paauwe et al., 2013), and, over  
22 this period, it is the ability-motivation-opportunity (AMO) model that has emerged as the  
23 dominant framework for structuring our understanding of the issues involved (Appelbaum,  
24 Bailey, Berg & Kalleberg, 2000; Boxall & Purcell, 2016; Boxall et al., 2016; Jiang et al., 2013;  
25 Paauwe, 2009). As research has tried to make visible what goes on inside the organizational  
26 ‘black box’, the hypothesized routes through which HPWS might have their effect have become  
27 more numerous and complex. One important development is that there has been increasing  
28 attention paid to the relatively neglected area of the structural and social relations represented by  
29 the ‘O’ of the AMO framework. As has recently been argued, attempts to understand these  
30 ‘transmission mechanisms’ have tended to focus either on the ‘A’—the abilities or the skills and  
31 knowledge of employees—or on the ‘M’—the levels of motivation that employees might  
32 experience (Boxall et al., 2016). As we have seen, it is the opportunities given to employees by  
33 relational coordination that allow the employees to use organizational resources in a more  
34 effective manner (Gittell et al., 2010). This paper thus takes up the call made Boxall et al. (2016,  
35 p.104), that ‘we must pay better attention to the “O” variable’.  
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48 In order to be in a position to do this, we need first to pick our way through a number of  
49 the issues facing any research in this area. The first of these is what practices to include under  
50 the heading of HPWS. Heavey et al.’s (2013, esp. pp.144-147) review of existing work is useful  
51 in this respect, revealing a rather odd mixture of dissensus and consensus. On the one hand, they  
52 identify 36 different categories of practice, and no one category is included in all of the studies  
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3 under review. On the other hand, they identify a break between the six most-used categories and  
4 the rest. The six are: compensation, training, selection, performance appraisal, communication  
5 and the HR function. This consensus view is reflected in the present paper. More detail on the  
6 choices made, and the precise statements used to capture the different practices, are presented in  
7 the methods section, below (see also Appendix A). In fact, seven categories of practice are used:  
8 job or employment security, training, employee participation, job description, information  
9 sharing, contingent compensation and performance appraisal. Four of the six most-used  
10 categories identified by Heavey et al. are thus included: compensation, training, appraisal and, in  
11 the form of information sharing, communication. Of the three other categories of practice used  
12 (participation, job description and employment or job security), two—participation and job  
13 security—were ranked seventh and eighth respectively in Heavey et al.'s review.

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15 A second issue is how the effects of different elements of HPWS might be differentiated  
16 from each other. In terms of the AMO model, the distinction is, of course, between ability-  
17 enhancing, motivation-enhancing and opportunity-enhancing HR policies or practices (see Jiang  
18 et al., 2012), and we make use of this distinction in the present paper. Categorizing each of the  
19 individual HR practices is also relatively straightforward, since, as Jiang et al.'s (2012) meta-  
20 analysis shows, there is a fair degree of consensus on this issue. In looking at the practices used  
21 here, it can be seen quite clearly that training can be regarded as ability-enhancing; job security,  
22 contingent compensation and appraisal as motivation-enhancing; and job description, employee  
23 participation and information-sharing as opportunity-enhancing practices.

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25 A third issue is how the idea of 'organizational performance' is treated. Dyer and Reeves  
26 (1995) identified a hierarchy of performance outcomes, and this is echoed in Guest's (1997)  
27 distinction between 'proximal' and 'distal' indicators of performance effects. Thus while distal  
28 indicators, such as the overall financial performance of an organization, might be the ultimate  
29 concern, it is through more proximal indicators, such as productivity and quality, that any effects  
30 will be achieved (see Peccei, Van de Voorde & Van Veldhoven, 2013, pp.18-19) These  
31 distinctions, however, also need to be considered in terms of organizational hierarchies. Large  
32 organizations are likely to be made up of a number of different workplaces or operational units,  
33 and it is at this level that the direct or proximal performance effects of HPWS will be felt. A  
34 focus on the workplace is made all the more necessary by the increasing emphasis being placed  
35 on social relations in production or service delivery—a matter that we examine explicitly below.

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3 As we have seen, it is primarily in terms of more operational outcomes that the impact of  
4 relational coordination has been assessed. Not only are such relations more likely to be present  
5 and observable at the workplace level, but, by their nature, it might be expected that they will not  
6 be the same across the organization as a whole. In looking at social relations, and trying to say  
7 something about their antecedents and outcomes, it is precisely such variation between  
8 workplaces that is required. It is at this level—the workplace or the branch—that the idea of  
9 organizational performance is employed in the present paper.

15 Having established the position of the present paper on these **three** key issues, we return  
16 to Boxall et al.'s call (2016, p.104), that 'we must pay better attention to the "O" variable', and,  
17 in particular, to the role that social relations—in our case as represented by relational  
18 coordination—might play in this. In terms of relationships amongst employees, the idea of  
19 'social capital' has been examined as a possible route through which HR policies might have  
20 their effect. Leana and van Buren (1999) show how this concept—'an asset that inheres in social  
21 relations and networks' (1999, p.538)—can be applied at an organizational level. In particular,  
22 they attempt to identify two things: the different routes through which employment or HR  
23 practices might encourage the development of social capital, and the different routes through  
24 which social capital might have organizational-level benefits. These links have been investigated  
25 empirically by Gant, Ichniowski and Shaw (2002) in their study of social capital amongst  
26 workers on steel-finishing lines. Gant et al. show how those lines in which HRM is  
27 'involvement-oriented' rather than 'control-oriented' are also those on which the workers have  
28 the higher levels of social capital needed for more successful problem-solving activity.

39 Other work on social relations has been located more explicitly as part of HPWS-  
40 performance debates. Evans and Davis (2005) have put forward an organization's internal social  
41 structure as a mediating variable in the relationship between HPWS and organizational  
42 performance outcomes. In the same way, Collins and Smith (2006) show how 'commitment-  
43 based' HR policies in high-technology companies contributed positively to a social climate based  
44 on trust and co-operation. This was shown to give rise to better knowledge exchange and  
45 combination on the part of knowledge workers and, in turn, to higher levels of organizational  
46 performance. Collins and Clark (2003) also showed how certain HR practices might contribute to  
47 the development of social networks of senior managers in such companies. Again, this appeared  
48 to improve decision-making and, in turn, some measure of financial performance.

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3 The research that—explicitly or implicitly—highlights how relationships between  
4 employees might give greater prominence to the ‘O’ of AMO, however, has paid little attention  
5 to the more structural aspects of work organization. Relational coordination, as we have seen, is  
6 likely to be of greater importance when work organization is interdependent in nature, and, if the  
7 significance of relational coordination can be established, this suggests one way in which the  
8 AMO model as a whole might be developed. Wright and Nishii (2013) are among the few who at  
9 least allude to work structures, drawing on Thompson’s (1967) classic distinction between the  
10 pooled, sequential and reciprocal forms of interdependence. Under low or pooled  
11 interdependence, argue Wright and Nishii, improved individual performance translates quite  
12 easily into unit-level performance, since it is merely a question of aggregating the individual  
13 improvements. When interdependence is high, on the other hand (ie when it is reciprocal),  
14 ‘increasing individual performance does not necessarily translate into increased unit  
15 performance’ (Wright & Nishii, 2013, p.109). Even here, this argument is not developed at any  
16 length, and little or no evidence is provided in its support.

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18 However the ‘O’ is operationalized, it is clear that it remains the least developed part of  
19 the AMO framework. There are those such as Boxall (2013), who do recognize the contributions  
20 of Evans and Davis (2005) and others, and who see this as an area on which increasing focus is  
21 being placed. From another influential account of the model, however, the impression can be  
22 gained that there are significant obstacles which still need to be overcome. This is Jiang et al.’s  
23 (2012) meta-analysis, which provides us with a rather lop-sided version of the AMO model—one  
24 in which ‘opportunity’ does not seem to be treated in the same way as ‘ability’ or ‘motivation’.  
25 While, as we might expect, ability-enhancing policies are able to act on employee ability, and  
26 motivation-enhancing policies likewise on employee motivation, opportunity-enhancing HR  
27 practices appear to have no direct target of their own (see Jiang et al., 2012, eg p. 1274,  
28 Figure 1). Instead, opportunity-enhancing practices are hypothesized only to work indirectly,  
29 through either or both of employee ability (or human capital) and employee motivation. Jiang et  
30 al. (2012) do little to explain all this: ‘In line with the literature,’ they say, ‘we focus on the  
31 mediating roles of human capital and employee motivation’ (2012, p. 1267). Indeed, Jiang et al.  
32 (2012) go so far as to try and distance social relations from the AMO model. Their focus on the  
33 mediating role of employees, they claim, ‘does not exclude other paths through which HRM can  
34 help increase financial outcomes’ (Jiang et al., 2012, p. 1270). These ‘other’ paths include  
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3 explicit reference to the relational coordination of Gittell et al. (2010), but the intention seems to  
4 be separate them from, rather than integrate them with, the AMO model as a whole. On the  
5 other hand, if the significance of relational coordination in this area can be more firmly  
6 established, then this might have wider implications for the way in which the model is  
7 conceptualized.  
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12 While our focus on relational coordination means that we do need to pay close attention  
13 to the 'O' of AMO, we also need to recognise the model's essentially multidimensional nature.  
14 Obeidat, Mitchell and Bray (2016) provide evidence of the utility of the AMO model, by looking  
15 separately at the performance effects of the sets of policies relating, respectively, to ability,  
16 motivation and opportunity. But, more than this, as Boxall and Purcell (2016, p. 160) argue, 'we  
17 need to consider all three AMO variables and how they interact'. Thus in the model proposed by  
18 Jiang et al.'s (2012) meta-analysis, for example, motivation-enhancing policies are expected to  
19 have their ultimate effect on performance not just through motivation itself, but also, but more  
20 indirectly, by being able to attract employees with higher levels of ability. Likewise, for Boxall  
21 and Purcell (2016), opportunity-enhancing polices, such as the design of work, could both  
22 provide intrinsic motivation for employees and encourage them to enhance their ability (see also  
23 Sterling & Boxall, 2013).  
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#### 34 *Research hypotheses*

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36 We can now draw together the various strands of our review of the secondary literature, and set  
37 out the formal hypotheses that will be tested through an analysis of our primary data (see also  
38 Figure 1). Our concern is to see whether relational coordination can, in Gittell et al.'s (2008b,  
39 p.166) words, contribute to 'an emerging relational perspective on high-performance work  
40 systems' which does not restrict itself to a focus on individual employee ability and motivation.  
41 We thus start with the potentially mediating role that relational coordination might play in the  
42 overall relationship between HPWS and organization-level performance:  
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50 *Hypothesis 1:* Relational coordination partially mediates the workplace-level relationship  
51 between HPWS, as whole systems, and performance outcomes.  
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3 Looked at in terms of the AMO framework, moreover, we need to see whether any such  
4 relationship can be part of the ‘better attention’ that Boxall et al. (2016, p.104) recommended be  
5 paid to the ‘O’ of opportunity. Our second hypothesis thus focuses on those HR practices that  
6 are opportunity-enhancing in nature:  
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12 *Hypothesis 2:* Relational coordination partially mediates the workplace-level relationship  
13 between opportunity-enhancing HR practices and performance outcomes.  
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17 At the same time, the interconnected nature of the AMO model means that we would not expect  
18 the opportunity-enhancing practices to be the only ones having their effects through relational  
19 coordination. In line with the analysis discussed at the end of the previous section, it is  
20 suggested that the more able and the better motivated employees would be the ones more likely  
21 to take advantage of whatever opportunities are offered to them. While we do not have data on  
22 ability and motivation themselves, we do have it at one remove, on ability-enhancing and  
23 motivation-enhancing practices respectively. We therefore test the following two-part  
24 hypothesis:  
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32 *Hypothesis 3:* Relational coordination partially mediates the following workplace-level  
33 relationships: (a) between skill-enhancing HR practices and performance outcomes, and  
34 (b) between motivation-enhancing HR practices and performance outcomes.  
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42 **Figure 1 about here**  
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## 46 **Methods**

### 47 *Research setting and data collection*

#### 48 *Research setting*

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50 The hypotheses are tested on data collected in a single company in the financial sector of  
51 Pakistan. The bank in the study is one of the largest and most banks in the country, having a  
52 nationwide branch network of more than 1300 branches and an agency relationship with more  
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3 than 3000 banks worldwide. It operates in all major cities and business centres across the main  
4 regions and provinces of Pakistan (State Bank of Pakistan, 2012). The branches of the bank are  
5 similar to each other in terms of size, technology, and organizational structure, and each branch  
6 offers the same range of services to their client base.  
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#### 10 11 12 *Data collection: sampling and procedure*

13 Data was collected in two main ways. Data on relational coordination and the HR practices  
14 making up HPWS was collected through a questionnaire survey of employees within bank  
15 branches, while data on workplace or branch-level performance was obtained independently  
16 from the bank itself. The source of data has been an issue in research into relational  
17 coordination, where researchers have recognised that the best source is employees themselves.  
18 Gittell et al. (2010, p. 503) acknowledged that a limitation of their own work was 'the use of  
19 [administrator] interviews rather than survey instruments to measure work practices,' a limitation  
20 to which we are not subject in the present study.  
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27 The physical collection of the data was done in collaboration with the Institute of Bankers  
28 Pakistan, a leading provider of technical training services for the banking sector. The Institute  
29 provided administrative support and research facilities throughout the process. Prior approvals  
30 were solicited from the bank's head office and those regional offices involved in the study. The  
31 survey was conducted with the help of the bank's central and regional HR departments. A  
32 sample of 340 branches was selected through a two-step stratified proportionate random  
33 sampling process, and these were surveyed in the period August to October 2011. Keeping in  
34 view the distinct geographical distribution of the bank's operations, it was not feasible to reach  
35 all employees in these branches. Therefore, it was decided to include bank branches from three  
36 areas: Central Punjab, Federal Areas Islamabad, and Khyber Pakhtunkhwa (KPK). The list of  
37 branches was taken from the head office of the bank. The total number of bank branches in these  
38 areas surveyed constitutes 57 percent (755 branches) of the total branch network. From the total  
39 number of 755 branches in areas of Central Punjab, Federal Areas Islamabad, and KPK, a  
40 random sample of 45% branches was drawn from each area to represent proportionate  
41 participation of branches from all over the country. Table 1 presents the information about the  
42 number of branches included in the study. Upon approval from head office and regional offices,  
43 branches were personally contacted and prior appointments were booked with each for  
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3 administering the survey. Utilising a small team of research assistants, the survey was personally  
4 administered to employees in the four categories of manager and officers in operations, credit,  
5 and cash functions at each branch, each branch having at least one respondent from each of these  
6 four main functions. In total, 3500 questionnaires were distributed and, of these, 2280 were  
7 returned, of which 1563 were usable.  
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15 **Table 1 about here**  
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21 Data on branch-level performance in the bank was also obtained in collaboration with the  
22 Institute, who were able to assure the bank on issues of how the data was to be protected and  
23 used. The bank agreed to provide branch-level performance measures including total deposits,  
24 advances, and branch profit. Performance data was provided by 120 branches, covering a total of  
25 887 employees. Branch performance measures were collected eight months after the survey, in  
26 July 2012. Longitudinality is an issue that has bedevilled HPWS-performance research (Gerhart,  
27 2013; Wall & Wood, 2005; Wright, Gardner, Moynihan & Allen, 2005), and, in the present  
28 study, only some part of the data might be considered to be of an ‘authentic’ longitudinal nature  
29 (Wall and Wood, 2005). As with many other studies in this area, practical constraints on research  
30 design made a greater degree of longitudinality difficult to achieve, and this of course must be  
31 taken into account in the interpretation of the results.  
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## 41 ***Measures***

### 42 *HPWS and HR practices*

43 We have already seen that the question of which practices to include as part of HPWS is one that  
44 has greatly exercised researchers in this area. As noted earlier, the seven categories of practice  
45 used here—employment or job security, training, employee participation, job description,  
46 information sharing, contingent compensation and performance appraisal—mean that the present  
47 study is broadly in line with the consensus identified in Heavey et al.’s (2013) review. Of the  
48 six most popular categories of practice identified in the review, the two not used in the present  
49 study are ‘selection’, which was excluded on the grounds that this was made up of practices  
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3 carried out centrally in the bank rather than at branch level (see also Liao, Toya, Lepak & Hong,  
4 2009, p.378), and ‘organizational structure’, which, despite its name, relates to the way in which  
5 the HR function operates, and, to the extent it can be considered a ‘practice’ at all, is something  
6 again that is carried out centrally rather than at the level of the branch. It should also be noted  
7 that the ‘information sharing’ category relates to information flows of a vertical nature within the  
8 organizational hierarchy, such as team briefings. It can thus be distinguished from the horizontal  
9 communication that forms part of relational coordination.  
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15 The extent of the selected practices was measured on the basis of employee responses to  
16 statements in the survey (see Appendix A). Responses were on a 5-point Likert scale, ranging  
17 from ‘strongly disagree’ (1) to ‘strongly agree’ (5). Again, this is in line with practice adopted in  
18 the studies surveyed by Heavey et al. (2013). The practices themselves were represented as  
19 follows. Employment security, training, employee participation and job description each used  
20 measures developed by Delery and Doty (1996); information sharing and contingent  
21 compensation were based on the measures of Zacharatos et al. (2005); and performance appraisal  
22 was measured using five items from Singh (2003), Delery and Doty (1996) and Snell and Dean  
23 (1992).  
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31 To create an index of HPWS for each respondent, the subscale aggregation method was  
32 employed (Liao et al., 2009). This study follows an additive approach for aggregating high  
33 performance work practices into an index. An additive approach assumes that the influence of  
34 high performance work practices on particular objective are distinct, and using more of these  
35 high performance work practices should result in expanded levels of particular objectives. In  
36 accordance with the regular process adopted by the HPWS literature, this study aggregated  
37 various measures of individual HR practices into a unitary index that measures HPWS (Guest,  
38 1999; Lepak *et al.*, 2006; Macky and Boxall, 2007; Way, 2002), and this study also follows the  
39 subscale aggregation method (Zacharatos *et al.*, 2005; Liao *et al.*, 2009). In the first instance,  
40 subscale scores were calculated by averaging across all items of the same HR practice (eg  
41 employment security). An average across the seven individual practices was used to create an  
42 index of HPWS for each respondent. The subscale aggregation method for each practice and for  
43 the HPWS index were justified by the high value of internal consistency across scales.  
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53 As we also saw earlier, the HR practices that made up HPWS were divided up according  
54 to the basic categories of the AMO model. Ability-enhancing practices included just training;  
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3 the motivation-enhancing practices were employment security, contingent compensation and  
4 appraisal; and the opportunity-enhancing practices, employee participation, job description and  
5 information-sharing. Using the subscale aggregation method, an average across the three  
6 individual practices was used to create an index of opportunity-enhancing HR practices for each  
7 respondent. Similarly, an index for skill-enhancing HR practice was calculated by averaging  
8 across all items of the training HR practice. In the same manner, an average across the three  
9 individual practices was used to create an index of motivation-enhancing HR practices for each  
10 respondent. These indices were also justified by their high value of internal consistency.

### 18 *Relational coordination*

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20 The measure of inter-functional coordination was based on the interactions between the four  
21 main groups of employees: those dealing with operations, those dealing with cash, those  
22 working in credit, and those with management responsibility. These groups work  
23 interdependently in order to carry out the two main areas of the branch's work: accepting  
24 deposits and making advances. The bank's deposits are processed through operations and the  
25 cash function, with compliance ensured through the credit function. In the case of advances,  
26 the lending proposals are routed through the credit function, processed through operations,  
27 with eventual payments made through the cash function. Branch managers are directly  
28 involved at all levels with operations, credit and cash function. Employees in the operations,  
29 credit and cash functions accounted for 39, 23 and 17 per cent of the sample respectively, with  
30 branch managers accounting for the remaining 21 per cent.

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32 Relational coordination was measured using an adapted version of the survey developed  
33 by Gittell (2001). Respondents were asked to answer each question in the survey with respect to  
34 each of the other functions. Survey items included the following: 'Do people in each of these  
35 departments communicate with you in a timely way about branch working?'; and 'When a  
36 problem occurs with branch working, do the people in each of these departments work with you  
37 to solve the problem?'. Responses to these items are measured on a 5-point Likert scale, and the  
38 same procedure adopted for the HPWS unitary index was followed for relational coordination.

### *Workplace performance*

In looking at performance, the focus was on those measures with which the branches themselves were most concerned (see Paradi, Yang & Zhu, 2011). In recent years, researchers have adopted three approaches to examine the performance of a bank at the branch level: production, intermediation, and profitability (Paradi *et al.*, 2011). In the production approach, bank branches are analysed as utilizing capital and labour to generate deposits and advances, while in the intermediation approach, bank branches are assessed in terms of the process through which a bank's deposits are transformed into loans. In the profitability approach, banks are assessed on the basis of how well the bank branches originate profits from their utilization of bank's assets, capital, and labor. In terms of the issues around performance discussed earlier in this paper, we can see that the production approach would give the most 'proximal' measure of performance, and the profitability approach the most 'distal' (Guest, 1997).

Two measures of branch performance are used in the present study. Taking the production approach would give us the most proximal performance indicator, and here we measure performance in terms of the level of deposits generated per head in the branch (deposits/employee). It is on this measure of performance that we would expect any (mediated) HR effect to be of greatest significance. The second measure of branch performance used is the ratio of advances to deposits (advances/deposits). This can be thought of as being based on the intermediation approach to performance, and so more distal than deposits/employee, but still more proximate than measures based on branch profitability. Identical sets of measures of branch-level performance were gathered across 120 bank branches. The bank's regional offices, and, in some cases, main branches, provided branch-level data on deposits, advances and profits. Figures on the number of staff were obtained from each branch.

### *Control variables*

While control variables have been a feature in HPWS-performance research, this has not always been the case in research on relational coordination. In Gittell *et al.*'s (2010) attempt to link work systems, relational coordination and performance, an acknowledged limitation was the 'lack of employee-level control variables other than the functional identity of the respondent' (2010, p.503). The present study was able to obtain data on age, qualification, experience, gender and length of service in the branch.

### ***Instrument validation***

#### *Factor analysis*

An exploratory factor analysis with principal components technique of factor extraction and varimax rotation method was conducted on all individual HPWS items. Prior to performing the principal components analysis on the 29 items of HPWS, the suitability of the data for exploratory factor analysis was determined. In order to get an optimal solution for cross loadings, three items were removed from the list of indicators in repeated factor analysis. The results of the analysis indicated the presence of seven factors with eigenvalues exceeding 1.0, and together these seven factors explain 61% of the total variance in HPWS. The same procedure was adopted with respect to the degree of relational coordination.

#### *Reliability analysis*

Cronbach's alpha was used to evaluate the internal consistency of skill, motivation, opportunity-enhancing HR practices, overall measure of HPWS and relational coordination. The coefficient values for each scale were approximately equal to, or more than, the recommended level of 0.7. To assess interrater reliability, two measures of intra class correlation coefficient, ICC (1) and ICC (2), were computed. These are set out in Table 2, with the results providing justification for treating HPWS and the degree of relational coordination as unit-level constructs.

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**Table 2 about here**  
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#### *Validity analysis*

Interrater agreement (IRA) was estimated for each dimension score using indices developed by James, Demaree & Wolf (1984) to ascertain justification for aggregation and determine the similarity of ratings within bank branches in an absolute agreement sense. The values of IRA indices ranges from 0 to 1 with values of 0.70 having been considered the traditional-off cut point (LeBreton, Burgess, Kaiser, Atchley & James, 2003). LeBreton and Senter (2008) provided a more-inclusive set of indices values guidelines, suggesting IRA values from 0.00 to 0.30 be

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3 interpreted as lack of agreement, 0.31 to 0.50 as weak agreement, 0.51 to 0.70 as moderate  
4 agreement, 0.71 to 0.90 as strong agreement, and 0.91 to 1.00 as very strong agreement.  
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8 The average  $r_{wg(j)}$  of HPWS for managers, employees in operations, credit, and cash functions  
9 were 0.93, 0.91, 0.92, and 0.89 respectively (see Table 3). These values exceed the  
10 recommended value of 0.70 suggesting a very strong agreement for managers, operations, and  
11 credit functions, and strong agreement for the cash function. With regard to relational  
12 coordination, the average  $r_{wg(j)}$  of the degree of relational coordination for managers, operations,  
13 credit, and cash functions were 0.91, 0.88, 0.87, and 0.87 respectively. These values also exceed  
14 the recommended value of 0.70 suggesting a very strong agreement for managers, and strong  
15 agreement for operations, credit, and cash functions. These results provide justification for  
16 aggregating individual level scores to the branch level for the HPWS and relational coordination  
17 dimensions.  
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29 **Table 3 about here**  
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## 34 **Results**

### 35 *Descriptive statistics*

36 Descriptive statistics for HPWS, the component sets of practices, relational coordination and the  
37 two measures of branch performance are shown in Table 4. The mean values of branch-weighted  
38 HPWS and relational coordination were 3.53 (SD=0.29) and 3.57 (SD=0.32) respectively,  
39 representing high levels of both variables. Amongst the HR practices, the mean values of  
40 opportunity-enhancing, skills-enhancing and motivation-enhancing HR practices were 4.01,  
41 4.20, and 3.86 respectively. Table 4 shows HPWS to be significantly positively correlated with  
42 both relational coordination among employees and operational outcomes of branch performance.  
43 The opportunity, skills and motivation-enhancing HR practices were also each significantly  
44 correlated with relational coordination and branch performance.  
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**Table 4 about here**  
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***HPWS as whole systems, relational coordination and workplace performance***

The three-step method recommended by Baron and Kenny (1986) was adopted to assess the mediating role of relational coordination in the overall effect of HPWS on workplace-level outcomes. Table 5 presents the summary statistics for the regression analysis of HPWS with branch performance. Results reveal a significant positive association between the extent of HPWS and deposits per employee ( $\beta = 74.19, p < 0.001$ ) and advances to deposits ratio ( $\beta = 16.38, p < 0.001$ ). The results provides sufficient evidence for the first condition of mediation.

In order to assess mediation, the degree of relational coordination and HPWS were both added into the Model (XMY). Results showed that the coefficient of HPWS with deposits/employees and advances /deposits significantly diminished in Model (XMY). These results satisfy the three conditions of mediation convincingly. Additionally, the Sobel (1982) test was conducted, and this confirmed a mediating role for relational coordination ( $z = 7.59$  and  $3.20, p < 0.05$  respectively). Overall, these results support Hypothesis 1, that relational coordination partially mediates the workplace-level relationship between HPWS, as whole systems, and performance outcomes.

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**Table 5 about here**  
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***Opportunity-enhancing HR Practices, relational coordination and workplace performance***

Results suggested that opportunity-enhancing HR practices were significantly associated with relational coordination ( $\beta = 0.085, p < 0.001$ ), deposits/employee ( $\beta = 27.25, p < 0.001$ ), and advances/deposits ( $\beta = 2.918, p < 0.001$ ). To assess mediation, relational coordination was included in the Model (XMY) (see Table 6). A comparison between results of models revealed that the regression coefficient of opportunity-enhancing HR practices diminished significantly

when the degree of relational coordination was added ( $\beta = 27.25$  to  $23.365$ ,  $p < 0.05$ ; and  $\beta = 2.918$  to  $1.617$ ,  $p < 0.05$ ). This suggests that relational coordination partially mediated the relationship between the opportunity-enhancing and operational outcomes. The results of the Sobel test provided further evidence of this ( $z = 3.65$  and  $2.78$ ,  $p < 0.05$  respectively). There was thus support for Hypothesis 2, that relational coordination partially mediates the workplace-level relationship between opportunity-enhancing HR practices and performance outcomes.

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**Table 6 about here**  
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***Skills- and Motivation-enhancing HR Practices, relational coordination and workplace performance***

Results indicated that skill-enhancing HR practices showed a significant association with relational coordination ( $\beta = 0.064$ ,  $p < 0.001$ ), deposits/employee ( $\beta = 9.272$ ,  $p < 0.001$ ), and advances/deposits ( $\beta = 1.828$ ,  $p < 0.001$ ). Relational coordination was added in the regression Models (XMY) (see Table 7). Results suggested that the regression coefficients of skill-enhancing HR practices reduced significantly in Model XMY when the relational coordination was added ( $\beta = 29.272$  to  $5.892$ ,  $p < 0.05$ ; and  $\beta = 1.828$  to  $0.827$ ,  $p < 0.05$ ). Additional analysis of the Sobel test also added support to this ( $z = 1.785$  and  $2.635$ ,  $p < 0.05$  respectively). There was thus support for Hypothesis 3(a), that relational coordination partially mediates the workplace-level relationships between skill-enhancing HR practices and performance outcomes.

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**Table 7 about here**  
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Finally, results also showed a positive association between motivation-enhancing HR practices, relational coordination ( $\beta = 0.088$ ,  $p < 0.001$ ), deposits/employee ( $\beta = 3.212$ ,  $p < 0.001$ ), and advances/deposits ( $\beta = 5.114$ ,  $p < 0.001$ ). To test for mediation, relational coordination was added into the model (see Table 8). Comparing the results of regression models, the coefficients

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3 of motivation-enhancing HR practices diminished significantly with the addition of relational  
4 coordination ( $\beta = 3.212$  to  $1.782$ ,  $p < 0.05$ ; and  $\beta = 5.114$  to  $3.865$ ,  $p < 0.05$ ). This was confirmed  
5 by the results of the Sobel test ( $z = 1.98$  and  $2.356$ ,  $p < 0.05$  respectively). Support was thus  
6 found for our final hypothesis, Hypothesis 3(b), that relational coordination partially mediates  
7 the workplace-level relationship between motivation-enhancing HR practices and performance  
8 outcomes.  
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**Table 8 about here**  
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### Conclusions and contributions

Overall, therefore, our results provide support for Hypotheses 1, 2, 3(a) and 3(b)—taken together, this means that relational coordination mediates the workplace practice-performance relationship, not only with regard to HPWS as whole systems, but also in regard to each of the three constituent parts of HPWS: opportunity-enhancing, skill-enhancing, and motivation-enhancing HR practices respectively.

But what are the wider implications of these results for our two main areas of concern—relational coordination and the HPWS-performance debate? In terms of the former, we can identify three important contributions to ongoing developments. We observed in our literature review how studies of relational coordination have so far been confined to a limited range of settings, especially healthcare (eg Gittell, 2008; Gittell et al., 2008a) and flight departures (eg Gittell, 2000; 2001). The first contribution of the present study is to show that relational coordination is capable of generating insight in financial services, another sector in which work systems can be characterized as being interdependent in nature. In contrast to Gittell et al.'s (2010) study of patient care, moreover, this study was able both to capture work practices on the basis of employees' own responses and to control for a number of potentially important employee characteristics.

Second, while confirming that relational coordination has a link to workplace or operational outcomes, we have been able to show how consideration of the antecedents of relational coordination can be expanded to cover what might be seen as generic HPWS. Again,

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3 previous work has been rather restricted in the kind of work systems it looked at. Gittell et al.  
4 (2010) showed how relational coordination might work in the case of work systems that are  
5 explicitly 'relational' in nature (see also Gittell, 2000; Gittell, 2002b), but the present study  
6 shows that relational coordination might also mediate the effects of systems which were not  
7 developed with inter-functional relations specifically in mind.  
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12 Third, by breaking down HPWS into their constituent elements, we can see something of  
13 the way in which relational coordination might play its mediating role. We might expect  
14 relational coordination to be the means through which specifically opportunity-enhancing HR  
15 practices have an effect on performance, and this indeed is confirmed in the present study. At  
16 the same time—and here the conclusions are a little more tentative—relational coordination also  
17 seems to play a mediating role in the effects of both ability-enhancing and motivation-  
18 enhancing HR practices. The implication, perhaps not a surprising one, is that more able and  
19 better motivated employees are better placed to take advantage of the opportunity represented by  
20 relational coordination, and thereby employ organizational resources in a more effective manner  
21 (Gittell et al., 2010).  
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30 This study's contributions are not confined to the area of relational coordination: the  
31 same results and conclusions can also be looked at in terms of what they imply for our second  
32 main area of concern, the longstanding debate on the relationship between HPWS and  
33 organizational performance. Again, three important contributions can be identified. The first  
34 and most basic of these is that relational coordination can be seen to be a mediating variable  
35 between HPWS and organizational performance. The present study thus helps answers Boxall  
36 et al.'s (2016, p.104) recent demand that 'we must pay better attention to the "O" variable' in the  
37 AMO framework. While there seems little doubt that the abilities and motivation of individual  
38 employees are important channels through which HR practices are of effect on performance, we  
39 need also to look more closely at the opportunities employees have to give effect to their  
40 enhanced efforts. One way of looking at this might be to say that as well as employee ability  
41 being the counterpart of ability-enhancing practices, and employee motivation being the  
42 counterpart of motivation-enhancing practices, we need something like 'opportunity taking' to be  
43 the counterpart of opportunity-enhancing practices.  
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54 Second, the present study adds to those which suggest that, within the 'O', more attention  
55 might be paid to the antecedents and impact of social relations. We need to take into account  
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3 that such a conclusion arises in part as a result of the research being conducted in a particular  
4 kind of setting, where there is a high degree of interdependence in the organization of work.  
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6 Nonetheless, there seems little reason to follow Jiang et al. (2012) in explicitly separating social  
7 relations from the AMO framework. Instead, we might follow those such as Boxall (2013), and  
8 see how social relations can be better integrated.  
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12 The third contribution to the wider HPWS-performance debate is to provide support to  
13 the idea that, in conjunction with social relations, the AMO model might pay more attention to  
14 the more structural aspects of the organization of work. In relational coordination, these are  
15 present in the interdependences that this form of work coordination builds on and develops. As  
16 was seen earlier, Wright and Nishii (2013, p.109) argue that when levels of structural  
17 interdependence are high, 'increasing individual performance does not necessarily translate into  
18 increased unit performance'. The analysis presented in the present paper would seem to run  
19 counter to this. By breaking down HPWS into their constituent parts, we can see how the higher  
20 individual performance implied by higher levels of ability and motivation might have an effect  
21 on performance via the development of relational coordination. This can only be tentative, but it  
22 does suggest that where levels of interdependence are higher, then, on the whole, levels of unit or  
23 workplace performance will be higher as well.  
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32 We turn finally to the implications of our findings, both for future research and for  
33 management practice. For research into relational coordination, we would encourage studies to  
34 be undertaken in a broader range of appropriate settings, with attention paid to an understanding  
35 of the type of practices conducive to the development of relational coordination—not just in  
36 terms of work systems, but also with regard to the attributes and attitudes of individual  
37 employees. For research on the HPWS-performance relationship, we would encourage  
38 researchers to develop the 'O' side of the AMO model and, as part of this, to incorporate a more  
39 refined understanding both of social relations and of the more structural aspects of work  
40 organization. The implications of this study for management practice begin with a recognition of  
41 the importance of context: relational coordination is not something that will be important in all  
42 work system settings. Where relational coordination is likely to be important—where levels of  
43 interdependence are high—then we hope that the present study has given a clear indication of the  
44 kind of practices that will enhance it and, ultimately, contribute to higher levels of organizational  
45 performance.  
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**Table 1**  
**Sampling of the Bank Branches**

<b>Areas</b>	<b>Central Punjab</b>	<b>Federal Areas</b>	<b>KPK</b>	<b>Total</b>
Number of Branches in Region	355	185	215	755
Surveyed Branches	160	83	97	340
Received HPWS and RC Branches	61	71	86	218
% of Surveyed Branches in Region	38	85	89	-
HPWS and Performance Matched Branches	35	46	39	120

**Table 2**  
**Intra Class Correlations for HPWS and Relational Coordination**

<b>Variables</b>	<b>Items</b>	<b>Alpha</b>	<b>ICC1</b>	<b>ICC2</b>
Skill-enhancing	4	0.738	0.414	0.738
Motivation-enhancing	13	0.811	0.248	0.811
Opportunity-enhancing	12	0.824	0.281	0.824
Overall HPWS	29	0.893	0.223	0.893
Relational Coordination	21	0.911	0.327	0.911
<b>Functions</b>	<b>HPWS</b>		<b>Relational Coordination</b>	
Manager	0.265	0.904	0.464	0.859
Operations	0.260	0.901	0.451	0.852
Credit	0.238	0.890	0.427	0.839
Cash	0.185	0.855	0.408	0.828

**Table 3**

<b>Interrater Agreement for HPWS and Relational Coordination (IRA)</b>			
<b>Functions</b>	<b>rwgj HPWS Uniform distribution</b>	<b>Rwgj RC Uniform distribution</b>	
Manager	0.93	0.91	
Operations	0.91	0.88	
Credit	0.92	0.87	
Cash	0.89	0.87	

**Table 4****Means, Standard Deviations and Correlations**

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. HPWS	1	--	--	--	--	--	--
2. Opportunity-enhancing	.436**	1	--	--	--	--	--
3. Skills-enhancing	.321**	.330**	1	--	--	--	--
4. Motivation-enhancing	.445**	.496**	.393**	1	--	--	--
5. Rel. Coordination	.419**	.185**	.154**	.177**	1	--	--
6. Deposits to Employee	.167**	.141**	.056*	.015*	.130**	1	--
7. Advances to Deposits	.141**	.057*	.043*	.092**	.142**	.074*	1
Mean	3.53	4.01	4.20	3.86	3.57	66.36	24.11
SD	0.298	0.693	0.748	0.643	0.318	131.85	36.27

\*\* Correlation significant at 0.01 level, \* Correlation significant at 0.05 level

**Table 5****Mediation of Relational Coordination (RC)  
between HPWS and Performance Outcomes**

Variables	RC	Deposits/Employee		Advances/Deposits	
	(XM)	(XY)	(XMY)	(XY)	(XMY)
Age	-.027	17.963	18.804	.589	.938
Qualification	-.026	7.067	7.867	-2.849	-2.678
Experience	.012	2.523	2.141	2.225	2.256
Gender	.047*	-2.177	-3.652	-3.747	-4.563
Function	-.015	4.893	5.368	-2.278	-3.214
Length of service	.031	2.215	1.253	4.484	4.852
HPWS	.446***	74.195***	60.268**	16.380***	12.014**
RC	--	--	31.245***	--	11.846**
R	0.429	0.182	0.194	0.170	0.193
R <sup>2</sup>	0.184	0.033	0.038	0.029	0.037
Adjusted R <sup>2</sup>	0.177	0.025	.029	0.021	0.029
F	28.24***	4.295***	4.301***	3.745***	5.359***
Sobel test	--	--	7.59*	--	3.20**

Note: X = HPWS, M = Relational Coordination, Y = Operational outcomes (Deposits to employee, Advances to deposits), \*p <.05; \*\*p<.01; \*\*\*p<.001.



**Table 6**

**Mediation of Relational Coordination (RC)  
between Opportunity-enhancing HR Practices and Performance Outcomes**

Variables	RC		Deposits/Employee		Advances/Deposits	
	(XM)	(XY)	(XMY)	(XY)	(XMY)	(XMY)
Age	-.040	17.815	19.645	.069	.681	
Qualification	-.047	3.902	6.033	-3.587	-2.874	
Experience	.036	5.856	4.209	3.140	2.589	
Gender	.038	-2.725	-4.449	-4.057	-4.634	
Function	-.015	2.630	3.302	-2.264	-2.040	
Length of service	.035	1.815	.224	4.686	4.154	
Opportunity-enhancing HR practices	.085***	27.254***	23.365***	2.918*	1.617*	
RC	--	--	45.739***	--	15.302***	
R	0.212	0.159	0.192	0.119	0.177	
R <sup>2</sup>	0.045	0.025	0.037	0.014	0.031	
Adjusted R <sup>2</sup>	0.037	0.018	0.028	0.006	0.023	
F	5.88***	3.266***	4.211***	1.799*	3.545***	
Sobel test	--	--	3.65***	--	2.78***	

Note: X = Opportunity-enhancing HR practices, M = Relational Coordination, Y = Operational outcomes (Deposits to employee, Advances to deposits), \*p <.05; \*\*p<.01; \*\*\*p<.001.

Table 7

**Mediation of Relational Coordination (RC)  
between Skills-enhancing HR practices and Performance Outcomes**

Variables	RC		Deposits /Employee		Advances /Deposits	
	(XM)	(XY)	(XMY)	(XY)	(XMY)	(XMY)
Age	-.052	13.738	16.487	-.347	.467	
Qualification	-.045	3.789	6.150	-3.587	-2.887	
Experience	.034	6.330	4.521	3.085	2.549	
Gender	.032	-4.668	-6.379	-4.303	-4.809	
Function	-.003	6.974	7.144	-1.806	-1.755	
Length of service	.038	3.545	1.522	4.789	4.190	
Skills-enhancing HR practices	.064***	9.272*	5.892*	1.828*	0.827*	
RC	--	--	52.726***	--	15.617***	
R	0.184	0.090	0.154	0.112	0.175	
R <sup>2</sup>	0.034	0.008	0.024	0.012	0.031	
Adjusted R <sup>2</sup>	0.026	0.001	0.15	0.005	0.022	
F	4.329***	1.016*	2.659**	1.58*	3.463***	
Sobel test	--	--	1.785*	--	2.635**	

Note: X = Skills-enhancing HR practices, M = Relational Coordination, Y = Operational outcomes (Deposits to employee, Advances to deposits), \*p <.05; \*\*p<.01; \*\*\*p<.001.

**Table 8****Mediation of Relational Coordination  
between Motivation-enhancing HR practices and Performance Outcomes**

Variables	Deposits/Employee		Advances/Deposits		
	RC (XM)	(XY)	(XMY)	(XY)	(XMY)
Age	-.040	13.848	16.075	1.277	1.847
Qualification	-.053	3.121	6.070	-3.799	-3.044
Experience	.037	7.465	5.418	1.990	1.466
Gender	.047	-4.473	-7.108	-3.371	-4.045
Function	-.012	7.236	7.890	-2.329	-2.162
Length of service	.038	3.828	1.691	5.016	4.469
Motivation-enhancing HR practices	.088***	3.212**	1.782**	5.114***	3.865**
RC	--	--	55.701***	--	14.255***
R	0.325	0.259	0.168	0.139	0.185
R <sup>2</sup>	0.231	0.216	0.085	0.019	0.034
Adjusted R <sup>2</sup>	0.129	0.131	0.057	0.011	0.025
F	6.802**	2.693*	4.71**	2.44***	3.868***
Sobel test	--	--	1.98**	--	2.356**

Note: X = Motivation-enhancing HR practices, M = Relational Coordination, Y = Operational outcomes (Deposits to employee, Advances to deposits), \*p <.05; \*\*p<.01; \*\*\*p<.001.

## Appendix A

### HPWS measures

#### Employment Security (Delery and Doty, 1996)

- My job is secure as long as I perform well.
- Management tries to avoid dismissing employees.
- I have job in the bank for as long as I want it.
- Management would make a genuine effort to keep my job even under adverse financial conditions.

#### Training (Delery and Doty, 1996)

- Bank provides me appropriate level job training.
- Employees in my job will normally go through training programs every few years.
- New employees are provided formal training programs to learn job related skills.
- Training programs have provided me opportunities to grow in the bank.

#### Employee Participation (Delery and Doty, 1996)

- Management involves me in decisions related to overall branch functions.
- Branch management encourage me to participate in decisions about my department.
- My manager asks me for suggestions on how to improve our branch functions.
- Branch management keep open communication with me in this department.

#### Job Description (Delery and Doty, 1996)

- The duties of my job are clearly defined.
- My job has an up to date job description.
- I have a job description that accurately describes the duties I perform.
- I decide job duties by myself rather than following a formal job description.

#### Information Sharing (Zacharatos et al. 2005)

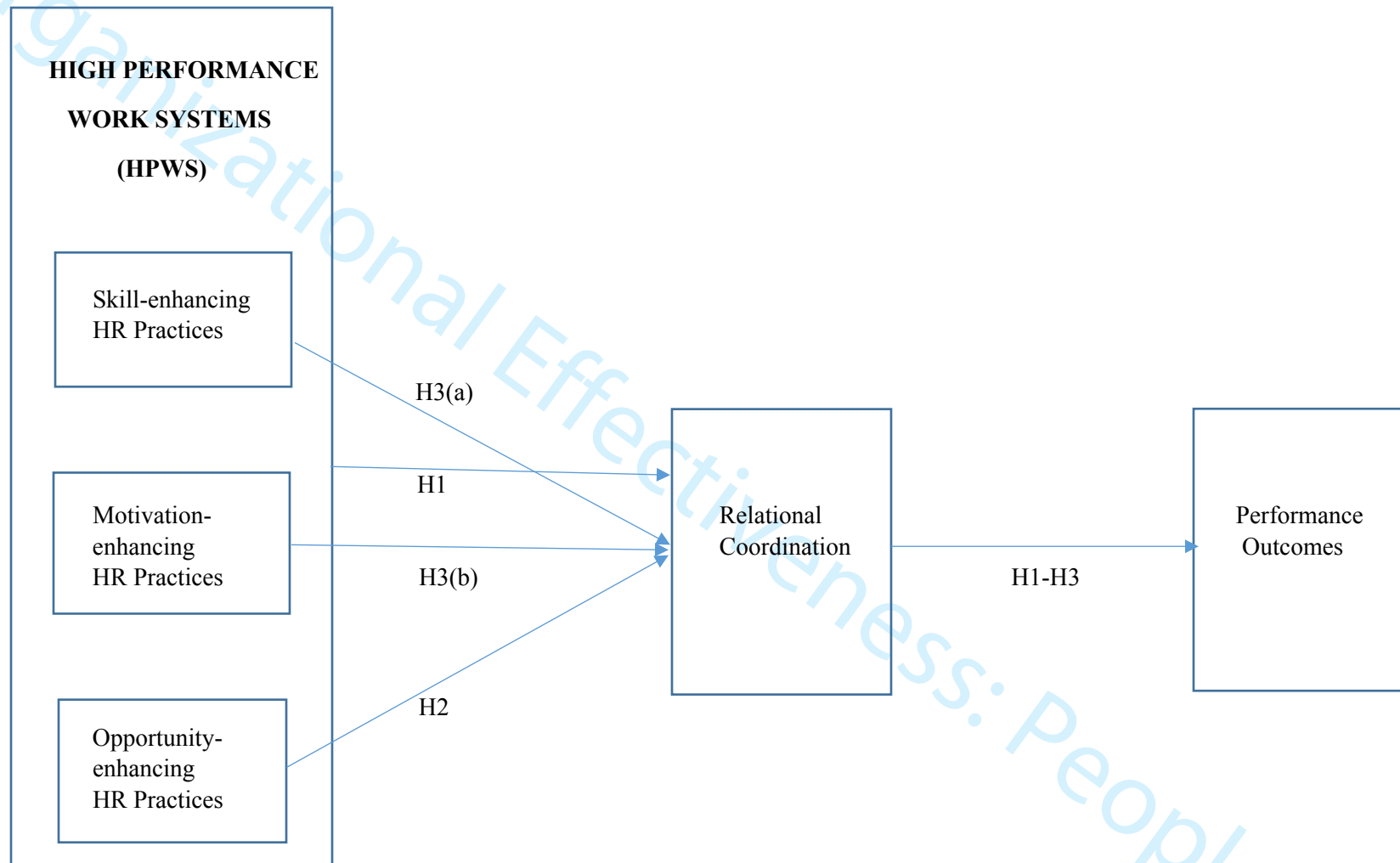
- I have enough information to perform my job well.
- Information about branch performance is shared with me.
- It is easy for me to communicate my thoughts to other colleagues in the branch. .
- I am given enough information to understand my role in this department.

#### Contingent Compensation (Zacharatos et al. 2005)

- My salary package is mainly based on seniority.
- Part of my compensation is based on bank's financial performance.
- My pay is higher than what competitors offer.
- I receive bonuses for the high performance of my department.

#### Performance Appraisal (Singh, 2003; Delery and Doty, 1996; Snell and Dean 1992).

- My performance appraisal is based on objective quantifiable results.
- I have clear understanding of the objectives and standards of performance appraisal system.
- My Performance appraisal is focused on growth and personal development.
- Branch management provides me feedback on the quality of my performance.
- Decisions such as promotions, pay increase and training are linked with my performance appraisal.



**FIGURE 1 Relational Coordination as Mediator between HPWS and Performance Outcomes**

**Response to Reviewer's Comments**

<b>Reviewer 1 comments</b>		
	<b>Comment</b>	<b>Response</b>
1	Yes, this paper is quite novel in terms of its integration of RC and HPWS theory, its contributions to both theories, and its use of the financial services setting to extend one of the theories (RC) that has largely been tested in airlines and healthcare.	No action required
2	Coverage and understanding of the relevant literature are impressive and thorough.	No action required
3	Methods and measures are appropriately designed to reflect the underlying theories.	No action required
4	Results are clearly presented. Conclusions do seem to pull all aspects of the paper together.	No action required
5	The paper identifies clear contributions to theory, but it does not yet identify contributions to practice, or to future research. I think these could be added quite easily.	We would like to thank the reviewer for this and for their other comments. They have contributed greatly to the strengthening of the paper. A paragraph has been added at the end of the paper's concluding section (highlighted on p. 24). This suggests future lines of research and also gives an indication of what the analysis implies for management practice.
6	The paper is clearly written and carefully argued.	No action required

**Response to Reviewer 2's Comments**

<b>Reviewer 2's comments</b>		
	<b>Comment</b>	<b>Response</b>
1	After reading this version of the manuscript, I was struck by the focus in the front end on "O," the hypotheses that did not really emphasize "O," and the results that supported the idea that A, M, and O are somewhat equally important and all influence performance at least partially through relational coordination. I guess this left me	We would like to thank the reviewer for this and for their other comments. They have contributed greatly to the strengthening of the paper. This first comment is linked to Comments 5 and 6, below, and in our responses there we

	feeling that all of the emphasis in the front of the paper on “O” might be misplaced.	explain how the paper has been revised in order to address this issue.
2	In the first section on relational coordination (page 4) you discussed measures and items. I would not do that at this point in the paper. I think you can clarify without getting into the measures. I would simply leave the measures for the measures section.	The second part of the opening paragraph on p. 4 of the previous version has been removed, from ‘To capture all this in quantitative terms ...’ to the end of the paragraph. The highlighted sections on p. 4 of the revised version stand, respectively, before and after the previous location of this passage.
3	I think your discussion of intended, actual, and perceived HRM practices is not all that necessary in the paper. You discuss them on page 8, and state a conclusion – that you think experienced by employees is best – but I believe this is more of a preference than a firm conclusion. All three can be worthy of study and may predict different things. We, for instance, have a lot of evidence that intended practices (identified by key informants) are actually related to performance. We do not have a lot of evidence that they are less or more related to different outcomes than the other. While some researchers may prefer or believe in one or another, I would suggest the research is still out on that – and that each is probably more appropriate for different research questions. In any case, I just do not think this is an important issue for you to discuss in this paper.	The paragraph on p. 8 of the original version, starting ‘A second issue facing research ...’, has been removed. Again, the two highlighted lines on p. 8 of the new version show where this paragraph was previously located. What were the third and fourth issues in this section have now been re-numbered in order to reflect the omission of the paragraph (p. 8).
4	Related to the issue above, I think your measures of HRM practices are more similar to those using key informants reporting on intended practices than they are to measures of employee perceptions. I say this because you stated many of your respondents were branch managers or managers of departments. These individuals are different than the regular employees who are actually carrying out the work and subject to the practices. Again, however, I do not think this is a huge issue for you to deal with here.	In line with the reviewer’s recommendation, and having made the revisions in response to Comment 3, no further revisions have been made to the paper in response to this comment.
5	When discussing A, M, and O, I liked most of what you did in the paper (page 8-9). What often	A paragraph (highlighted on p. 11) has been added in order to

	<p>gets missed in such discussions, and yours is no exception, is that to some extent they are related. In particular, there is plenty of research that the O-enhancing practices also enhance M. In many ways, the O-enhancing practices are directly related to intrinsic motivation. So, I do not believe we can fully segment these practices across the three outcomes. This is not a huge problem, but it is something I think we need to be better about acknowledging.</p>	<p>address this comment, and this is referred to explicitly in setting up Hypothesis 3 on p. 12, and also returned to in the conclusions (p. 23, second para, having been p. 23, third para, in the previous version).</p>
6	<p>When I got to your hypotheses, I was surprised. After all of the discussion of O, I was surprised that hypotheses 2, 3a, and 3b, all present the same type of relationship, simply substituting A, M, and O-enhancing. I thought you were going to hypothesize that the O-enhancing practices related more strongly to relational coordination, therefore, had a stronger indirect effect on performance through this mechanism. As the hypotheses stand now, they suggest that you either (a) change them to be more consistent with the framing of the front end of the paper, or (b) change the front end to treat A, M, and O equally.</p>	<p>We have followed course (b) here. The hypotheses are essentially the same (pp 11-12), although we have changed the wording of Hypothesis 3 so as to de-emphasize it a little. It now appears as more of a single (two-part) hypothesis. As indicated in response to Comment 5, in introducing Hypothesis 3 (p. 12) there is now an explicit reference back to the new paragraph on p. 11 which deals with the interconnected nature of the AMO model.</p>
7	<p>On page 13, you state “The source of data has also been an issue in research into relations coordination, where, just as with HR practices, researchers have recognized that the best source is employees themselves.” It is with the latter end of that statement that I must vehemently disagree. I know of no studies that have definitively concluded that we must obtain HR practice data from employees for it to be useful and valid. Yes, employee perceptions may be good at predicting some things, but as I state earlier, we have strong and consistent relationships between HR practices provided by key informants and firm performance. You are not alone, however, in asserting that employee perceptions are better – and I will call out such assertions whenever I see them. Again, I have not seen any studies of this – just theoretical speculation and preferences.</p>	<p>The revised version of this paragraph is highlighted on p. 13. We have removed those sections that refer to the issue of employee responses being necessary or desirable for the measurement of HR practices. We still do refer to this issue in relation to relational coordination.</p>
8	<p>In describing the data collection, I was surprised by the process. As I read it, someone (or group)</p>	<p>A small team of research assistants was utilised in the</p>



	<p>actually went to each of the branches to collect data. You did this for 340(?) branches (of which you finally had full data from 120?). And you did it all in a few months? Did you have multiple researchers who split up and went to different branches? How many branches were visited in a single day? What you have written here is that 340 branches were visited by researchers and data was collected in 90 days (some of which were weekends and holidays).</p>	<p>physical collection of the data from the bank branches, and this is now acknowledged at the top of p. 14. As the data collection section (previous and revised versions) also acknowledges, the research was undertaken with the full cooperation and support of the Institute of Bankers Pakistan (pp 13-14).</p>
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