

Examining the Ability, Motivation and Opportunity (AMO) framework in HRM research: Conceptualization, measurement and interactions

Anna Bos-Nehles¹ | Keith Townsend² | Kenneth Cafferkey³ | Jordi Trullen⁴

¹University of Twente, Faculty of Behavioural, Management and Social Sciences, The Netherlands

²Griffith University, Nathan campus, Australia

³Sunway University, Selangor, Malaysia

⁴Ramon Llull University, ESADE, Barcelona, Spain

Correspondence

Anna Bos-Nehles, University of Twente, Enschede, Netherlands.

Email: a.c.nehles@utwente.nl

[Correction added on 10 March 2023, after first online publication: The fourth author affiliation has been updated in this version.]

Abstract

Despite the increasing popularity of the Ability, Motivation, Opportunity (AMO) framework in the Human Resource Management (HRM) field, AMO research is at a crossroads in theoretical and empirical development. This is due to (a) a lack of clarity about the conceptualisation and measurement of AMO variables, (b) the construction of AMO articles that do not distinguish between AMO differences and AMO-enhancing HRM practices and fail to integrate them, (c) a lack of understanding about how AMO variables at the individual and organizational levels interact to generate individual and organizational performance, and (d) a lack of consideration of the process (mediators and moderators) through which AMO generates performance gains. Based on the analysis of 104 quantitative HRM articles published between 1997 and 2022, this study helps to draw clearer distinctions among AMO variables and levels of analysis. The review of the empirical literature shows that there is excessive heterogeneity with regard to the conceptualization and utilisation of AMO variables, which in turn leads to scale proliferation. We find that research on AMO-enhancing HRM practices and AMO differences is rarely combined and tends to be tested at a single level rather than more logical cross-level effects between AMO-enhancing HRM practices, AMO differences and performance. We also found that whereas Ability and Motivation differences mediate the relationship between AMO-enhancing HRM practices and performance, opportunity appears to be a boundary condition in the relationship between Ability and Motivation with performance outcomes. The paper concludes with relevant avenues for future AMO research suggested for the field of HRM.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *International Journal of Management Reviews* published by British Academy of Management and John Wiley & Sons Ltd.

INTRODUCTION

The relationship between Human Resource Management (HRM) and performance remains unclear despite decades of research in this field with meta-analyses reporting positive links (Combs et al., 2006; Jiang et al., 2012). The ‘hard problem’ in HRM lies in our understanding of *how* HRM practices influence performance at the individual and organisational level (Townsend et al., 2021, p. 116). Work performance theorists (e.g. Campbell, 1974; Schwab & Cummings, 1976) have defined performance as an outcome associated with the accomplishment of role requirements on the part of individual organizational members. Researchers are increasingly adopting what is known as the AMO framework—that a combination of an employee’s Ability (A), Motivation (M) and Opportunities (O) can provide a predictive measure of individual or aggregated performance (P). This framework has become one of the most applied theoretical perspectives to understand HRM-performance relationships (Paauwe, 2009), especially within the domain of HRM journals.

Ability can be understood as ‘physiological and cognitive capabilities that enable an individual to perform a task effectively’ (Blumberg & Pringle, 1982, p. 563), or, more generally, as employees’ knowledge, skills, competencies and proficiencies (Kim et al., 2015b; Marin-Garcia & Martinez Tomas, 2016). *Motivation* can be considered as a force that directs, energizes, and sustains behaviour (Van Iddekinge et al., 2017), or the willingness and desire of employees to perform a task (Bos-Nehles et al., 2013). Finally, *Opportunity* covers the contextual or environmental factors that are beyond the direct control of an individual and is described by Blumberg and Pringle (1982, p. 565) as ‘the field of forces surrounding a person and his or her tasks that enables or constrains that person’s task performance’. These three dimensions together, in some combination, assist individuals to perform well (Boxall & Purcell, 2003).

There has been an emphasis on two streams of AMO research with the first distinguishing between AMO variables at the individual level and the second stream considering AMO variables at the organizational level. There is though, a third, less common stream that integrates both the individual and organizational level variables. Individual-level AMO variables include individual differences (i.e. personal characteristics) in AMO that help improve individual performance (Blumberg & Pringle, 1982). AMO variables at the organisational level of analysis are *AMO-enhancing HRM practices* designed to increase performance which can be aggregated to the organizational level. AMO is thus considered a superordinate

concept that allows various elements to be grouped together into three different dimensions of performance antecedents and suggests that the interaction of these elements can help to predict performance. It is because of the flexibility in the use of the AMO framework that researchers have used it extensively in a wide variety of research contexts (with the Applebaum et al., 2000 book receiving almost 5000 citations on google scholar). Yet, so far, with the exception of the work by Marin-Garcia and Martinez Tomas (2016)—which narrowly focused on the description of AMO-enhancing HRM practices and performance measures, there has not been a systematic attempt to understand how AMO is empirically used in HRM studies. Given the large amount of research in HRM that at least refers to the AMO framework, a systematic review of the literature is both warranted and timely to guide future theoretical and empirical advancement.

Although the AMO framework prior to 2000 was viewed and operationalised as an individual-level framework, its application to HRM systems is now more often used to explain aggregate-level outcomes, such as organizational or firm performance. As such, it is often applied within the HRM field through the construct AMO-enhancing HRM practices, in which it helps explore the ‘black box’ between high-performance work systems (HPWS) and performance. The underlying logic is that certain HRM practices can be combined as sub-bundles of an overarching HRM system to enhance the employees’ AMO and subsequent performance (Appelbaum et al., 2000; Lepak et al., 2006). Ability-enhancing HRM practices are used to enhance employees’ skills and abilities and are thus also called skill-enhancing HRM practices (Gardner et al., 2011; Jiang et al., 2012; Subramony, 2009) or competency-enhancing HRM practices (Chuang et al., 2016). Motivation-enhancing HRM practices are implemented to increase employees’ motivation. Opportunity-enhancing HRM practices are those practices that are used to boost employees’ opportunity to perform (Jiang et al., 2012). These sub-bundles are also called empowerment-enhancing HRM practices (Gardner et al., 2011; Subramony, 2009).

With this review two main goals are pursued. Firstly, we investigate the different ways in which the AMO framework has been conceptualized and measured in HRM studies. This is an attempt to find commonalities of approach and practice that can guide and consolidate future empirical research. Secondly, our review also aims at understanding the ways in which the different AMO variables interact in affecting performance. This aim is justified by existing debates in the literature over how AMO variables should be combined to generate higher levels of performance. On one hand individual-level AMO differences are hypothesised to mediate the

relationship between AMO-enhancing HRM practices and performance outcomes (Gardner et al., 2011; Jiang et al., 2012; Kehoe & Wright, 2013). On the other hand, AMO differences seem to interact with each other, as suggested by Blumberg and Pringle (1982) and Schwab and Cummings (1976). For example, at the individual-level, empirical evidence is provided for interactions between ability and opportunity (e.g. Bos-Nehles et al., 2013; Endres & Rhoad, 2016; Pham et al., 2018) as well as between motivation and opportunity (Andreeva & Sergeeva, 2016; Kellner et al., 2016; Rayner & Morgan, 2018). Similarly, at the organisational level, AMO-enhancing HRM practices also seem to interrelate with each other in a synergistic system (Gardner et al., 2011; Jiang et al., 2012). Empirical evidence at the organizational level provides for two-way (e.g. Bello-Pintado, 2015; Beltrán-Martín & Bou-Llusar, 2018) and three-way (Kim et al., 2015b) interactions between AMO-enhancing HRM practices. Thus, we find diverse and often inconsistent findings over how individual-level AMO differences and AMO-enhancing HRM practices interact both within and between levels of analysis to generate higher levels of performance.

The rest of this article is structured as follows. Firstly, the systematic literature review (SLR) methodology is introduced, followed by a review of the empirical research carried out in HRM research using the AMO framework. The review focuses on the conceptualizations and measurement of AMO and the interactions between AMO variables through mediation and moderation models used to test the relationships between AMO variables and performance outcomes. We finish with a discussion of the implications of these findings for current and, more importantly, future AMO-related empirical research.

METHODOLOGY

A SLR of the AMO research within the field of HRM was conducted. The utility of such an approach is that it moves beyond intuitive acceptance of AMO and provides the potential to unearth gaps in our understanding of what has been achieved to date (Bolt et al., 2022; Pickering & Byrne, 2014). The advantages of undertaking a SLR are that it provides an explicit structure to develop criteria for the inclusion and exclusion of published research with the aim to make this process transparent and reproducible (Siddaway et al., 2019). For this review, we used the 15-steps method developed by Pickering and Byrne (2014) to ensure transparency, reduce instances of bias on the part of the researcher and replicability of the literature review.

The topic of the review is the application and measurement of AMO in the HRM literature (**Step 1**). Our focus of interest was quantitative articles only (as suggested by

Van De Voorde et al. (2012) for systematic reviews) to understand which AMO and performance variables were actually used. Another reason for only including quantitative studies is that core focus of the research revolves around the specific measurement of AMO. These articles needed to be published after 1997, the year in which Guest (1997) published a highly cited article calling for an HRM-performance theory using the AMO framework (**Step 2**). We took an iterative process by searching for *abilit* + motivation* + opportunit** in the title, abstract, and keywords (**Step 3**) in the Scopus, Web of Science (WoS) and EBSCO databases (**Step 4**). This process resulted in 936 articles in the Scopus database, 820 in the WoS database and 299 articles in the EBSCO database (a total of 2055 articles). To be included, articles needed to meet the following criteria (**Step 5**): (a) articles had to be peer reviewed (e.g. Heinis et al., 2022), (b) needed to use ability, motivation and opportunity scales and (c) required some form of a performance measure as a dependent variable. That is to say, there are hundreds of articles that refer to the AMO framework; however, relatively few are empirical articles that actually use the framework to frame the research project. Thus, after applying criteria in step 5 we removed 932 articles from our initial search, leaving us with 1123 articles.

We then prepared an Excel database and subsequently read and assessed the publications to determine the efficacy of our keywords and database search (**Step 6**). Each of the authors independently screened approximately 300 papers to select those articles that fit our inclusion criteria. The screening process included reading the title and abstract of the articles to ascertain their suitability. We excluded articles that were not related to the broadly interpreted field of people management as well as review and theoretical articles. The final set of exclusion criteria were articles that referred to HRM but did not relate specifically to the practice of HRM (e.g. marketing or operation management articles that mention HRM in the body of their article). These exclusions accounted for almost 900 (897) articles leaving us with 226 articles. The research team divided these 226 articles to further assess their suitability. The penultimate stage of the process was to exclude articles that mentioned the key words but did not discuss the AMO framework or related it to the HRM context. The final exclusion criterion was that AMO variables that were measured needed to be explicitly specified, as some simply referred to including 'AMO variables' leaving us with a total of 74 articles.

Given that the AMO framework is sometimes referred to with different labels, especially in the HPWS literature (e.g. Gardner et al., 2011 talk about skill, motivation, and empowerment-enhancing practices), we performed a further search to complement our initial one. Siddaway et al. (2019) suggests that at least two databases need to

be searched, and we used the business and management categories of Scopus and WoS to search for journal articles that used different AMO synonyms including (1) competency, competence, capability and skill (as synonyms of ability), (2) willingness, commitment, engagement and effort (as synonyms of motivation) and (3) empowerment as a synonym of opportunity. This new search resulted in a total of 820 entries for Scopus and 1267 for WoS. After repeating the same procedure described in steps 5 and 6, as well as deleting all duplicates, we ended up with only 30 additional papers. When these 30 papers were added to the original 74, this resulted in a final list of 104 articles.

Initial data analysis suggested emergent themes relating to the conceptualization and measurement of AMO variables, the level of analysis and whether the studies used individual-level AMO differences compared to AMO-enhancing HRM practices. The first ten articles were included in the database and categories populated. When this process was reviewed by each member of the research team, more categories were deemed necessary and added, and then the initial ten articles were reanalysed to fit the new categories (**Step 7**). We then entered the remainder of the articles in a final sample of 104 (**Step 8**). For each ability, motivation, opportunity and performance variable, all practices or sub-variables listed in the review articles were added to the database which allowed for revising of categories (**Step 9**).

In total we found 218 variables under A, M and O in the review; Ability (72 variables), Motivation (75 variables) and Opportunity (71 variables) (**Step 10**). The remaining steps are used to evaluate key results, identify shortcomings and suggestions for future research areas (**Steps 11–15**), as recently suggested by Bolt et al. (2022). The remainder of this article presents the findings from the systematic literature review, and discusses implications for future application of the AMO framework.

CONCEPTUALISATION AND MEASUREMENT OF AMO VARIABLES

When AMO and performance variables and the scales that are used to measure these variables are classified or grouped together, some interesting findings are uncovered. This section highlights some of the significant insights of our analysis and is supported by Table 1. In the table we separate the AMO-enhancing HRM practices and the AMO differences, and present the broadly defined variables, more specific variables, their occurrence and percentage of this occurrence and also we present the number of different scales used for the most common variables. Initially, we have aggregated conceptually similar variables, for example, ‘training’, ‘training and develop-

ment’ and ‘extensive training’ in the first column (titled ‘aggregated AMO Variables, broadly defined’); we then disaggregated these broad measures to show the more precise variable that is used. To demonstrate the wide variety of measures used, but also limiting the size of the table, we have limited inclusion to the most commonly used variables in each of the AMO constructs and only included items that have been used at least three times.

Overall in our sample, there were 72 different variables used to measure ability, 75 measuring motivation and 71 measuring opportunity; the vast majority (just under 80%) of these variables refer to AMO-enhancing HRM practices. The variety of scale items, but more importantly the reporting of questions and scales used leaves significant room for improvement and transparency. For example, the phrase ‘based on previous empirical studies including...’ is used quite often, without details regarding what precisely was being asked or the scales that were being used. Scale proliferation has been presented as a problem for theory development in the past (e.g. Brough & Hawkes, 2018) and it also seems to be an issue within the AMO research. Edgar and Geare (2005) echo this concern whereby they found that different measures produce diverse results.

The ability-enhancing HRM practice most measured is training with 25 articles (26%). Additionally, though, there are other more specific training measures, for example, training for teamwork (Andreeva & Sergeeva, 2016), green training (Pham et al., 2019a) or development (Gould-Williams et al., 2010). Within the scales used to measure training as an ability-enhancing HRM practice, we find a high level of disparity. For example, 15 different scales were used to measure ‘training’ (the scales of Huselid, 1995; Sun et al., 2007; Wright et al., 2003 were the most often cited reference in terms of ‘adapted from’) with three articles not stating what scale they used at all, and another five articles reporting vague references to scales based on or adapted from previous research.

Certainly, there is some overlap in many of these scales, but there are also notable differences. For example, the Wright et al. (2003) and Huselid (1995) measures have been used twice each and both are single item scales with similar phrasing, asking respondents to answer ‘on average, how many hours of training an employee receives each year’ within their organisation. The Sun et al. (2007) scale has been used three times and is a four-item scale that measures (1) extensive training programmes, (2) employees in customer contact jobs getting training ‘every few years’, (3) formal training for new hires and (4) formal training programs to increase promotability. The second most commonly occurring Ability variable that is measured is ‘recruiting’ with 14 articles (15%). Occasionally authors using this variable would use vague phrasing suggesting that the items were ‘designed to assess recruitment

TABLE 1 Different Ability, Motivation, Opportunity (AMO) variables and their occurrence

	Aggregated AMO variable, broadly defined	Specific variable	Occurrence	Percentage of studies^a	Different scales used
Ability enhancing practices	Training		57	59	15
		Training	25	26	
		Training and development	9	9	
		Extensive training	5	5	
	Hiring		47	49	9
		Recruiting	14	15	
		Selection	14	15	
		Hiring selectively	10	10	
	Development		17	17	10
		Development	4	4	
Career development initiatives		3	3		
Ability characteristics	Knowledge	Specific work-related knowledge	4	4	
		Knowledge sharing	4	4	
	Self-efficacy	Self-efficacy	4	4	
Motivation enhancing practices	Evaluation		39	41	12
		Performance appraisals	19	20	
		Performance evaluation	8	8	
		Regular formal evaluations	4	4	
	Pay		34	35	9
		Compensation	11	11	
		Performance based pay	10	10	
		Above average pay	3	3	
	Incentives		34	35	4
		Benefits	8	8	
		Incentives	7	7	
		Rewards	3	3	
	Career development		24	25	13
Promotion		10	10		
Job security		5	5		
Motivation characteristics	Culture/Climate	Trust and reciprocation	7	7	
		Organizational climate	6	6	
	Individual motivation and engagement	Individual motivation	5	5	
		Engagement	5	5	
Opportunity enhancing practices	Decision making/voice/participation		33	33	24
		Participation	15	15	
		Empowerment	6	6	
		Involvement	6	6	
	Job design		24	25	11
		Autonomy	11	11	
		Job design	6	6	
	Policies		13	14	6
		Grievance and complaint processes	5	5	

(Continues)

TABLE 1 (Continued)

Aggregated AMO variable, broadly defined		Specific variable	Occurrence	Percentage of studies ^a	Different scales used
Opportunity characteristics	Relationships	Teamwork	7	7	
		Support	6	6	

^aPercentages are rounded to the nearest whole number for ease of presentation.

and selection' with very little additional detail. Again, this allows little transparency and no capacity for replication to lead us towards a generalizable theoretical development of the AMO-performance paradigm.

A similar diversity is found in the Motivation domain, with 'compensation' listed on 11 occasions (11%), and 'promotion' listed on ten occasions (10%). To measure compensation, a Prieto Pastor et al. (2010) scale was used three times. They ask if employees receive monetary rewards based on (1) individual performance, (2) group performance, (3) organisational performance and (4) whether the company's pay system reflects employee contributions to the organisation. Thirteen other different scales were used, including Wright et al. (2003) which focusses on performance-based pay asking if employees (1) have formal evaluation of job performance, (2) pay raises based on performance and (3) the opportunity to earn individual bonuses for productivity and performance. However, once again, many articles refer to measures that rely on previous AMO research, and cite quite commonly Appelbaum et al. (2000), Jiang et al. (2012) and Subramony (2009) as the source of the statements they use in their study, without explicitly stating which scales have been utilized. Fore-shadowing our conclusion about increasing consistency within AMO research, this lack of transparency in the measures used prevents any replication studies to increase the generalisability of the AMO framework and future theoretical development.

Participation is the most commonly used opportunity variable with 15 articles (15%) and 'autonomy' is the second most commonly used opportunity variable with 11 articles (11%). For participation, reference to the Jiang et al. (2012) and the Appelbaum et al. (2000) scales were both used three times each (primarily in concert with other measures) and again, authors do not explicitly state what measures they have used from these original sources. There were 22 other scales used to measure decision making/voice/participation. The scales used here are no more transparent in reporting measurement, but where questions are listed they cover a range from 'the company shares job-relation information with teams' to 'in this job I am provided many kinds of information' and questions that ask the percentage 'of the workforce included in a formal information sharing system'.

Thus, we see that there is a wide diversity of practices that are adopted within studies that use the AMO research framework, but equally as important is that there is a wide array of scales used in studies that purport to measure the same thing. These range from single-item measures in some instances, to more detailed scales with four or five item measures. It is of concern that some reporting of scales only provides a vague reference to 'previous AMO research'. The vast majority of studies that are measuring AMO-enhancing HRM practices when compared to individual-level AMO differences, such as self-efficacy, intrinsic or extrinsic motivation, or perceived opportunities. For example, 59 out of a total of 75 variables used to measure motivation were some sort of motivation-enhancing HRM practices. While this in itself would make sense given we have limited our research to HRM-related studies, we would also make the point that employees' individual-level AMO differences should mediate the effect of AMO-enhancing HRM practices on performance, and could be included for a more nuanced and improved understanding of AMO overall.

It is worth noting that some AMO-enhancing HRM practices are not clearly connected to a single bundle but appear in different bundles in different studies. For example, Katou and Budhwar (2010) and Choi (2014) consider performance appraisal practices as ability-enhancing while other authors consider performance appraisal practices (e.g. De Reuver et al., 2019; Ma et al., 2017; Yu et al., 2020) as motivation-enhancing. Choi (2014) uses promotion and career development as ability-enhancing HRM practices while it is used by Malik and Lenka (2019) and Schuster et al. (2019) as motivation-enhancing. Similarly, job design practices are considered as ability-enhancing by, e.g. Innocenti et al. (2011) and Obeidat et al. (2016), as motivation-enhancing by, e.g. Andreeva and Sergeeva (2016) and Wang et al. (2019b), and as opportunity-enhancing by, e.g. Guerci et al. (2015) and Rehman et al. (2019). The inconsistent categorisation of AMO-enhancing HRM practices does not help us to develop theory.

When we consider the individual level AMO differences, ability covers variables such as ability to share or transfer knowledge (Andreeva & Sergeeva, 2016; Chang et al., 2012), ability to learn (Jeng & Hung, 2019), and skills-related variables, such as intercultural competencies (Liu

& Shaffer, 2005) and expertise (Kang & Kim, 2017). Motivation includes variables such as intrinsic and extrinsic motivation (Yildiz et al., 2019), attitudes such as work engagement (De Wind et al., 2015) or commitment (Knies & Leisink, 2014), and climate, including collaborative climate (Kim et al., 2015a, 2015b). Opportunity characteristics include support variables (leader behaviours), such as support by HR professionals (Gilbert et al., 2015), supportive supervision (Vashdi et al., 2019), time variables, such as time availability (Siemsen et al., 2008), and relationships with co-workers, such as social networks (Liu & Shaffer, 2005).

When considered in the context of Boxall and Purcell's (2003) suggestion, then AMO-enhancing HRM practice variables can mean different things within different contexts, a potential solution and direction forward that will allow both theoretical development into the future and empirical evidence to support practitioners. We would suggest that researchers begin to limit the scales used to measure AMO research, as utilising the same measures in different contexts would increase the generalizability of the AMO model. In essence the AMO model would be best served by moving away from research designs that make assumptions as to what 'commonly constitutes' AMO and divert attention instead to the specific measurement of AMO.

AMO DIFFERENCES AS MEDIATORS OF AMO-ENHANCING HRM PRACTICES AND OUTCOMES

In addition to understanding how AMO is conceptualized and measured in the literature, we also explored the link between AMO and performance, paying particular attention to mediation and moderation relationships. Figure 1 provides some insights into the relationships identified in articles that explicitly modelled AMO variables as mediators (the numbers in brackets are the frequency of each variable). First, our findings support the traditional AMO framework, which states that employees' AMO differences mediate the relationship between AMO-enhancing HRM practices and performance. Contrary to our assumption that AMO differences are individual-level variables and that AMO-enhancing HRM practices are organizational-level variables, our analysis showed that AMO differences can either be tested at the individual level (e.g. self-efficacy) or at the organisational level (e.g. human capital). The same is true for AMO-enhancing HRM practices, which can be measured at the individual level (e.g. perceptions of AMO-enhancing HRM practices) or the organizational level (e.g. aggregated measures or intended AMO-enhancing HRM practices). Mediators identified in

the articles usually refer to AMO differences, whereas AMO-enhancing HRM practices act as antecedents. Several studies follow this logic with AMO-enhancing HRM practices (e.g. Beltran-Martin & Bou-Llugar, 2018), specific AMO-enhancing HRM bundles (e.g. Fan et al., 2021; Mom et al., 2019) or employee perceptions of strong HRM processes (Gilbert et al., 2015) acting as antecedents and AMO differences as mediators.

We also identified some instances where AMO differences acted both as antecedents and mediators (e.g. De Wind et al., 2015; Jeng & Hung, 2019; Kettinger et al., 2015; Tuuli & Rowlinson, 2009), supporting the idea that Ability, Motivation, or Opportunity variables mutually influence each other (e.g. Kellner et al., 2016). For instance, Kettinger et al. (2015) studied the antecedents of individual knowledge sharing in organizations and found that perceived IT support (O) led to perceived information management capability (A), which in turn improved the knowledge sharing psychological climate (M). In another example, Knies and Leisink (2014) found that employees' autonomy (O) affected employees' commitment (M), which in turn influenced extra role behaviours.

Figure 1 also illustrates that Opportunity acts as a mediator less frequently than Ability or Motivation. A more in-depth analysis of articles where Opportunity is a mediator, shows that it never acts as a stand-alone mediator, but always in combination with Ability and Motivation (e.g. De Wind et al., 2015; Edgar et al., 2021; Gilbert et al., 2015; Hassan et al., 2020; Shahzad et al., 2019; Tuuli & Rowlinson, 2009; Wang et al., 2019a, 2019b). The same is not true for Ability and Motivation, which occasionally act as standalone mediators (e.g., Jeng & Hung, 2019; Amin et al., 2022). We also found instances where Ability and Motivation appear together as mediators without Opportunity (e.g. Andreeva & Sergeeva, 2016; Knies & Leisink, 2014; Mom et al., 2019). As we will discuss when addressing interactions between AMO variables, Opportunity is more often modelled as a contextual factor that strengthens or weakens the association between Ability or Motivation and Performance, rather than as a mediator.

In general, there is some degree of consensus in the types of mediation variables that are used for the different AMO factors. Thus, Ability mediators at the individual level of analysis are commonly measured through self-efficacy scales, which are labelled 'ability' (e.g. Andreeva & Sergeeva, 2016; Hassan et al., 2020; Knies & Leisink, 2014). Motivation mediators, in turn, refer to intrinsic or extrinsic motivation (e.g. Edgar et al., 2021) or to affective commitment (Gardner et al., 2011)—especially at the organizational level of analysis.

Finally, it is worth noting that most articles that test AMO mediation models do so at the individual level of

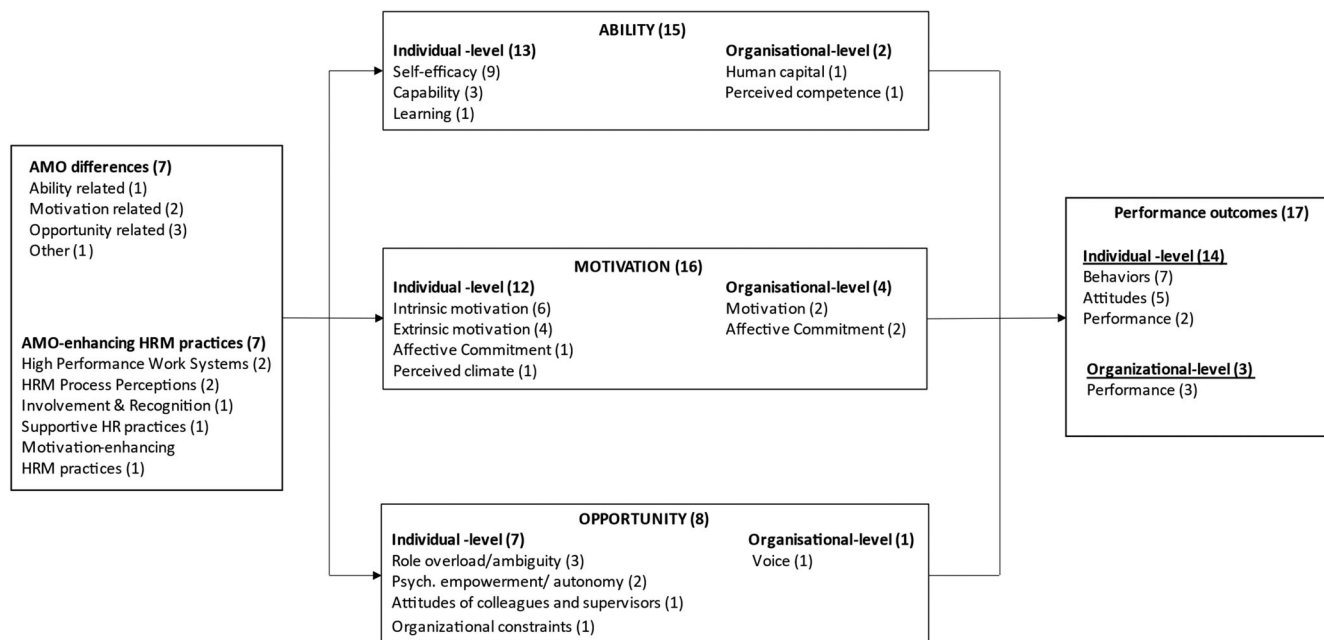


FIGURE 1 Ability, Motivation, Opportunity (AMO) mediators.

analysis. In these cases, AMO-enhancing HRM practices are usually measured as employee perceptions and are analysed at the individual level (Andreeva & Sergeeva, 2016; Edgar et al., 2021). Despite the AMO framework suggests that organizational or team level AMO-enhancing HRM practices affect individual-level AMO differences (hence assuming a cross-level relationship), only three studies adopt a multi-level approach (e.g. Beltran-Martin & Bou-Llusar, 2018; Ma et al., 2017; Mom et al., 2019), where individual level mediators in turn affect organizational level outcomes, following a 2-1-2 mediation model design in only two of these.

To summarise our analysis of mediation, Ability and Motivation differences are the most common mediators of AMO-enhancing HRM practices on performance outcomes. Secondly, there is some degree of consensus in the types of variables that are used as AMO mediators, especially for Ability and Motivation. Third, there is a lack of studies that empirically address the multi-level logic behind the AMO model, which distinguishes between AMO-enhancing HRM practices at the organisational level, individual-level AMO differences and organizational performance outcomes. Finally, only a few studies investigate the relationships among AMO differences, examining whether one AMO difference acts as antecedent or mediator of another, despite these relationships have been found in qualitative work before (Kellner et al., 2016).

INTERACTIONS BETWEEN AMO VARIABLES AND PERFORMANCE OUTCOMES

The final part of our analysis focuses on the interactions that are established between AMO variables in the reviewed articles. Figures 2 and 3 offer a summary of the relationships found and assist in drawing some valuable conclusions about AMO interactions. The analysis of the interactions indicates that it is mainly Motivation and Opportunity that act as moderators in the relationship between antecedents and performance outcomes, with Ability being used as a moderator only on three occasions (Kim et al., 2015b; Lai et al., 2018; Najafi-Tavani et al., 2018). Overall, the most common interaction is that of Ability and Opportunity (e.g. Najafi-Tavani et al., 2018; Pham et al., 2019b), where Opportunity is modelled as a moderator and Ability as an antecedent of performance. Often Motivation acts as a moderator of the relationship between Ability and performance (e.g. Wang et al., 2019a).

Overall, we can distinguish between three types of moderators in the cases of both Motivation and Opportunity. First, there are individual-level moderators. In the case of Motivation, these include individual motivation variables such as intrinsic motivation. For instance, Wang et al. (2019a) examined whether intrinsic and extrinsic motivation to share knowledge moderated the relationship between individual job experience and individuals'

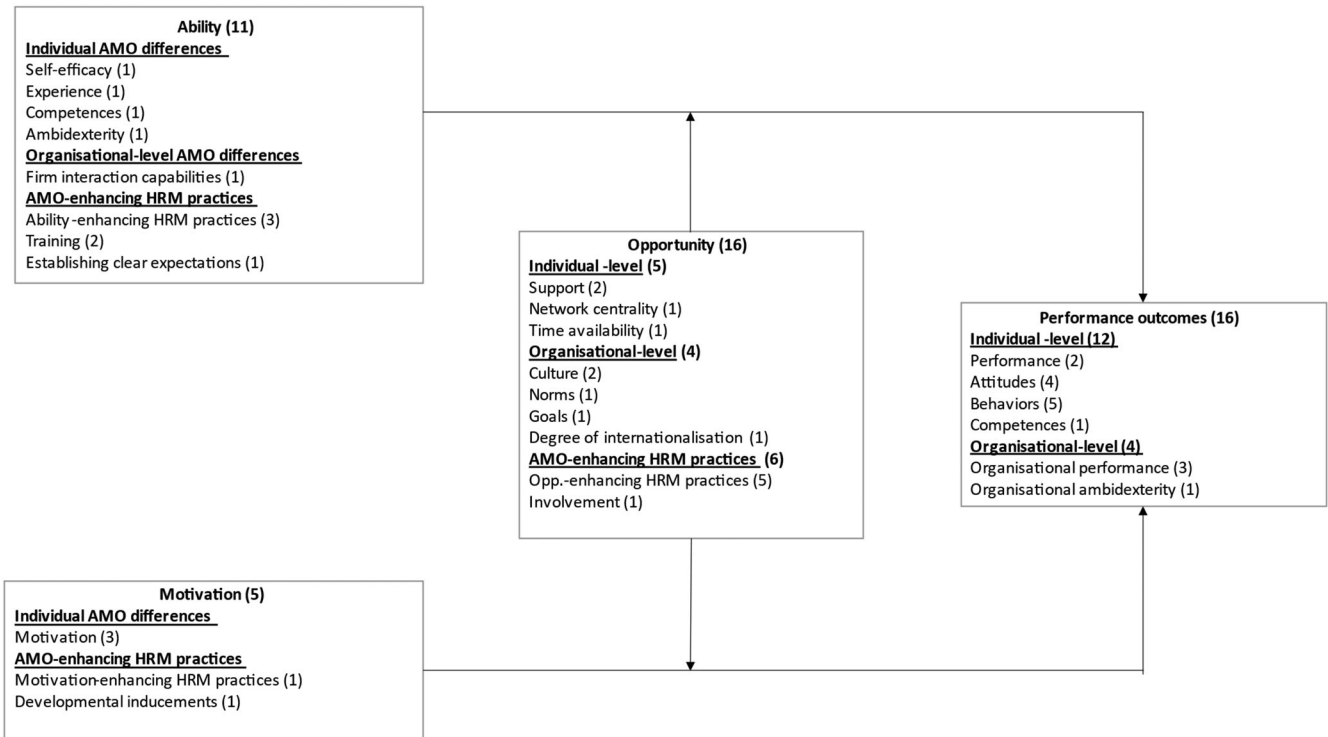


FIGURE 2 Opportunity as moderator in the relationship between Ability and Motivation with performance outcomes

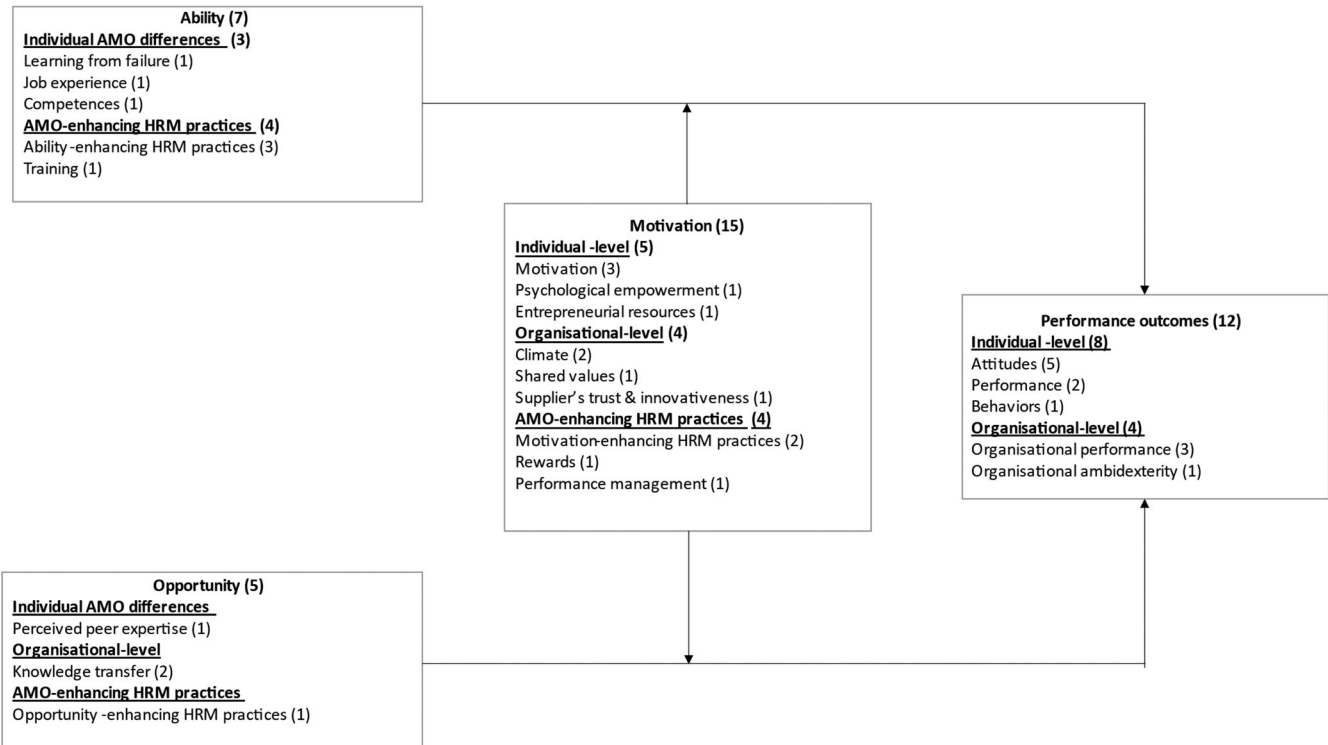


FIGURE 3 Motivation as moderator in the relationship between Ability and Opportunity with performance outcomes

performance in R&D alliances. For Opportunity, individual level variables tend to be perceptions of support (such as supervisor proactive personality). For example, Bos-Nehles et al. (2013) hypothesized that line managers' effectiveness in implementing HRM practices depended on their HR abilities, and that this relationship was moderated by the level of support that they perceived from HR professionals. In addition to individual level moderators, there are also several examples of organizational ones. In the case of Motivation, these vary but are always related to a particular organizational climate or shared culture. For instance, Najafi-Tavani et al. (2018) argue that headquarters-subsidiary knowledge transfer flows increase subsidiary local responsiveness, and that this relationship is moderated by the firm's level of psychological safety, which denotes a supportive climate where subsidiaries know that they will not be negatively judged by HQs when taking risks. In the case of Opportunity, organizational level moderators also focus on organizational culture, norms and goals. Finally, a last group of moderators includes AMO-enhancing HRM practices, such as motivation-enhancing or opportunity-enhancing HRM practices. One illustration is the work of Mom et al. (2019) who show that the extent to which operational managers ambidexterity influences organizational ambidexterity partly depends on opportunity-enhancing HRM practices, which include participation in decision making, information sharing and support for ideas.

Interestingly, AMO differences (e.g. Bos-Nehles et al., 2013; Wang et al., 2019a) and AMO-enhancing HRM practices (e.g. Bello-Pintado, 2015; Ho & Kuvaas, 2020; Pham et al., 2019a, 2019b) tend to interact among themselves and rarely with each other. We only found three instances in which AMO differences and AMO-enhancing HRM practices interacted with each other across levels (Andreeva & Sergeeva, 2016; Ma et al., 2017; Mom et al., 2019). For example, Andreeva and Sergeeva (2016) tested whether opportunity-enhancing HRM practices moderated the relationship between individual-level AMO differences (ability, intrinsic and extrinsic motivation) and individual performance outcomes.

Finally, it is also worth noting (even if not included in our summary figures) that we found some examples of three-way interactions of AMO variables at the individual (Hong & Gajendran, 2018; Kim et al., 2015b; Lai et al., 2018; Pham et al., 2019a, 2019b; Wang et al., 2019a) and the organizational level (Bello-Pintado, 2015; Kim et al., 2015a). Three-way interactions confirm that AMO is a multiplicative model, as suggested by Schwab and Cummings (1976) and Blumberg and Pringle (1982).

To summarize, the analysis of interactions among AMO variables highlights several important findings. First, there is evidence of both two-way and to a lesser extent three-

way interactions. In the case of two-way interactions, Motivation and Opportunity are the most common moderators whereas Ability is rarely theorized as such. In addition, the most common interaction is between Ability and Opportunity, indicating that the relationship between an individual's ability or ability-enhancing HRM practices with performance outcomes depends on the context, or the boundary conditions in which this relationship is being investigated, such as the organizational climate or the opportunity-enhancing HRM practices that are offered in an organization. Second, interactions can be established between AMO differences at the individual or organizational level or between AMO-enhancing HRM practices. As a result, we witness limited evidence for cross-level interactions between AMO differences at the individual level and AMO-enhancing HRM practices at the organizational level. Third, at the individual level the most common moderators are either motivation or perceived support variables, whereas at the organizational level both Motivation and Opportunity variables commonly refer to organisational culture or climate.

DISCUSSION

Given the prominence that the AMO framework has acquired in the HRM literature as an explanation of the HRM-performance relationship, it is timely to systematically investigate the ways in which this framework has been used empirically. The present study analyses how the AMO framework has been conceptualized and measured in HRM studies, as well as showing how AMO variables interact. Table 2 below summarizes the main issues identified in the current AMO literature, future research directions and exemplary studies that can be used as a benchmark in pursuing those paths.

Our findings regarding the AMO conceptualization and measurements show a large diversity of variables and scales used. While some level of variance would be expected, the lack of consistency in the operationalization of AMO-enhancing HRM practices and AMO differences across studies raises some concerns. Blumberg and Pringle (1982) already pointed at the need for conceptual clarity in their seminal contribution. For example, when discussing 'ability' they argued that defining 'ability so broadly as to include everything except motivational influences is contrary to general usage and renders the concept incapable of predicting and explaining performance' (p. 562). Without being more precise and consistent in defining AMO, there is the risk that the framework ends up having little predictive power.

In the case of AMO-enhancing HRM practices, one possibility is taking a rigorous and highly cited

TABLE 2 Issues with current AMO research, suggestions for future research and exemplary studies

Issue	Future research	Example
Little consistency in conceptualization and measurement of AMO-enhancing HRM practices.	Adopt a benchmark model. Use practices in Table 1 as guide. Study cross-domain effects (e.g. Ability-enhancing HRM practices increase Motivation).	Jiang et al. (2012) Ma et al. (2017) Beltrán-Martín and Bou-Llusar (2018) Andreeva and Sergeeva (2016)
Scale proliferation	Provide detail about the specific items used, and ground scales in previous literature.	<u>Ability</u> : 'Training, Hiring, Development' (Huselid, 1995; Sun et al., 2007; Wright et al., 2003) <u>Motivation</u> : 'Pay, Incentives, Job Design, Career Development' (Prieto Pastor & Perez-Santana, 2010; Wright et al. 2003) <u>Opportunity</u> : 'Job Design, Decision making/voice/participation, Policies' (Jiang et al., 2012; Appelbaum et al., 2000)
Little attention paid to the relationships among AMO variables	Include Ability and Motivation differences as mediators. Test mediation relationships among AMO differences. Use Opportunity as a boundary condition (moderator) of the relationship between Ability or Motivation with Performance. Use Motivation as a moderator in the relationship between Ability and Performance. Model interactions between AMO-enhancing HRM practices and AMO differences. Model three-way interactions between AMO variables, especially in a (A*M)O combination.	Raineri and Valenzuela-Ibarra (2021) Katou and Budhwar (2010) Knies and Leisink (2014) Kellner et al. (2016) Bos-Nehles et al. (2013) Audenaert et al. (2019) Kim et al. (2015a, 2015b) Wang et al. (2019a, 2019b) Bello-Pintado (2015) Andreeva and Sergeeva (2016) Mom et al. (2019) Pham et al. (2019a) Pham et al. (2019b) Lai et al. (2018)
Excessive focus on single-level AMO relationships.	Include more multi-level AMO studies. For example: Test cross-level (2-1-2) models. Test cross-level interactions. Test models that connect organizational-level AMO-enhancing HRM practices (intended practices) with individual-level AMO-enhancing HRM practices (perceived HRM practices) and its effects on AMO differences.	Mom et al. (2019) Rehman et al. (2019) Beltrán-Martín and Bou-Llusar (2018) Andreeva and Sergeeva (2016)

benchmark study (e.g. Jiang et al., 2012) for conceptualizing the different AMO-enhancing HRM bundles. Additionally, the results from this review in Table 1 can provide a good starting point for classifying practices on a more inductive basis. Clarity and consistency across articles in defining what practices should be included in each AMO-enhancing HRM bundle is thus key. When the same practice could be connected to more than one AMO component (e.g. training being part of an Ability-enhancing and Motivation-enhancing HRM bundle), it seems a better option to model cross-domain effects (e.g. ability-enhancing practices influence employees' ability, but also their motivation).

In addition to problems with conceptualisation, our review also pointed at the need to use similar scales in the measurement of AMO variables. In reporting the scales selected, researchers should at a minimum provide detail about the specific items used, as well as grounding those items in previous literature to avoid further scale proliferation (Brough & Hawkes, 2018). A final caveat considering the AMO conceptualization is the relative scarcity of studies that address AMO differences vis-à-vis those that include AMO-enhancing HRM practices. While both approaches are valid, future research should aim at including AMO differences in their analyses either as stand-alone predictors of performance, or, as we address later,

mediators of the effects of AMO-enhancing HRM practices. After all, the focus on AMO differences was the original genesis of the AMO model.

In terms of the relationships that can be established between the different AMO variables, a first conclusion from the analysis is that most studies do not address those, focusing instead on the direct impact of AMO variables on performance without modelling any mediation or moderation effects. Based on the subset of studies that did model those effects, our analysis reveals that Ability and Motivation differences tend to act as mediators in the relationship between AMO-enhancing HRM practices and performance (Gardner et al., 2011; Kehoe & Wright, 2013). The Ability path is based on the human capital perspective, in which AMO-enhancing HRM practices affect an employees' ability to perform well (Wright et al., 2001) and thus secure the human capital needed to attain performance outcomes (Raineri, 2017). The other path is a motivational path between HRM practices and performance outcomes, in which individual-level attitudes, such as affective commitment, job satisfaction or psychological empowerment (e.g. Gardner et al., 2011; Messersmith et al., 2011; Raineri & Valenzuela-Ibarra, 2021) mediate the relationship between AMO-enhancing HRM practices and performance outcomes.

Our analysis also revealed that there were very few studies that considered mediation relationships among AMO differences, where, for example, increased Ability influenced Motivation which in turn affected outcomes. One exception was the Knies and Leisink (2014) study, in which HRM practices were related to employees' autonomy (Opportunity), which in turn affected employees' commitment (Motivation), which led to extra role behaviours. Despite previous AMO qualitative research has shown that low levels of Ability or lack of Opportunities may affect Motivation, and that different levels of Motivation can also have an impact on Abilities (e.g. Kellner et al., 2016), quantitative studies tend not to test these relationships. Yet, this type of modelling is very much needed in future research as it may offer a more realistic perspective of how the AMO framework works empirically.

Regarding interaction effects, we found that AMO variables may interact in two-way or three-way relationships. Evidence was found for two-way interactions between AMO differences (Bos-Nehles et al., 2013; Endres & Rhoad, 2016; Najafi-Tavana et al., 2018) and between AMO-enhancing HRM practices (Bello-Pintado, 2015; Pham et al., 2019b), as well as three-way interactions between AMO differences (Hong & Gajendran, 2018; Kim et al., 2015b; Wang et al., 2019a) and between AMO-enhancing HRM practices (Bello-Pintado, 2015; Pham et al., 2019a) at the individual and the organizational level. The most common moderators in these interactions were either

Motivation or Opportunity, whereas Ability was very rarely modelled as such.

An interesting pattern in our data is that the three AMO components tend to adopt different roles. Ability commonly acts as a mediator and very rarely as a moderator, whereas the contrary happens with Opportunity. Motivation seems more versatile and can act in both ways. Opportunity is thus often not directly related to performance outcomes but offers the context in which the effect of Ability or Motivation can flourish and thus result in higher levels of performance. These patterns in the data, especially for Opportunity, are consistent with Blumberg and Pringle's (1982) original conceptualization. They defined Opportunity as 'the particular configuration of the field of forces surrounding a person and his or her task that enables or constrains that person's task performance and that are beyond the person's direct control' (p. 565). Related to this definition, we define Opportunity as a boundary condition of performance, which means that Opportunity is external to the individual vis-à-vis his or her internal Ability or Motivation (see more recently, e.g. Hauff et al., 2021). Examples of boundary conditions in our sample are organisational goals, collaborative climates, organisational cultures, norms and values or psychological safety, which encourage the individual to make optimal use of their Ability and Motivation. Future research could thus consider the strong logic behind the moderating role of Opportunity in the relationship between Ability and Motivation with performance.

Finally, we observed that most of the articles focused on single-level AMO relationships, where either individual-level AMO variables affected individual performance outcomes or organizational-level AMO variables influenced organisational performance outcomes. Despite most articles in our sample including AMO-enhancing HRM practices, the great majority of these studies were carried out at the individual level of analysis rather than at the organizational level. Most of the mediation models tested AMO relationships between individual perceptions of AMO-enhancing HRM practices and individual-level AMO differences affecting individual performance outcomes. For future research, we call for more cross-level AMO research where organizational-level AMO-enhancing HRM practices influence individual-level AMO differences, which in turn affect organizational performance in a 2-1-2 model, or where organizational level AMO-enhancing practices affect employees' perceptions of those practices, and in turn individual AMO difference variables.

This lack of multi-level AMO models was also visible in the interactions between AMO variables. It was remarkable that it was either AMO differences or AMO-enhancing HRM practices that interacted among each other, nearly with almost no studies looking at cross-level

interactions, where for example, AMO differences impact on performance was moderated by AMO-enhancing HRM practices. Interactions in cross-level approaches, for example, between individual-level AMO differences and organisational-level AMO-enhancing HRM practices were rare and deserve more attention in future research.

CONCLUSION

In conclusion, our review has shown that the AMO framework remains very useful to model and understand the HRM-performance relationship, and to define the relationships between AMO-enhancing HRM practices and employees' behaviours and attitudes. Despite its apparent simplicity, the AMO framework is indeed complex when researchers consider different levels of analysis, mutual influences between AMO variables, as well as interactions. This, linked to the lack of consistency in conceptualization, measurement and reporting, make it very difficult for researchers to build and consolidate AMO-related findings in HRM. This review has helped to gain clarity over what can be done in the future so that AMO research and theoretical development can grow in a more structured manner, while still being useful to the many HRM scholars who use it in their research.

REFERENCES

- *Denotes inclusion in the Systematic Literature Review.
- *Andreeva, T. & Sergeeva, A. (2016) The more the better ... or is it? The contradictory effects of HR practices on knowledge-sharing motivation and behaviour. *Human Resource Management Journal*, 26, pp. 151–171.
- Appelbaum, E., Bailey, T., Berg, P., Kalleberg, A.L. & Bailey, T.A. (2000) *Manufacturing advantage: why high-performance work systems pay off*. Ithaca: Cornell University Press.
- *Audenaert, M., Van der Heijden, B., Conway, N., Crucke, S. & Decramer, A. (2019) Vulnerable workers' employability competences: the role of establishing clear expectations, developmental inducements, and social organizational goals. *Journal of Business Ethics*, 166, pp. 627–641.
- *Bello-Pintado, A. (2015) Bundles of HRM practices and performance: empirical evidence from a Latin American context. *Human Resource Management Journal*, 25, pp. 311–330.
- *Beltrán-Martín, I. & Bou-Llusar, J.C. (2018) Examining the intermediate role of employee abilities, motivation and opportunities to participate in the relationship between HR bundles and employee performance. *Business Research Quarterly*, 21, pp. 99–110.
- Blumberg, M. & Pringle, C.D. (1982) The missing opportunity in organizational research: some implications for a theory of work performance. *Academy of Management Review*, 7, pp. 560–569.
- Bolt, E.E.T., Winterton, J. & Cafferkey, K. (2022) A century of labour turnover research: a systematic literature review. *International Journal of Management Review*, 1–22. Available from: <https://doi.org/10.1111/ijmr.12294>.
- *Bos-Nehles, A.C., Van Riemsdijk, M.J. & Looise, J.K. (2013) Employee perceptions of line management performance: applying the AMO theory to explain the effectiveness of line managers' HRM implementation. *Human Resource Management*, 52, pp. 861–877.
- Brough, P. & Hawkes, A. (2018) Designing impactful research. In: Brough, P., O'Gorman, J. & Occhipinti, S. (Eds). *Advanced research methods for applied psychology: design, analysis and reporting*. London: Routledge, pp. 7–14.
- Boxall, P. & Purcell, J. (2003) *Strategy and human resource management*. New York: Palgrave, McMillan.
- Campbell, T. (1974) Equality of opportunity. *Proceedings of the Aristotelian Society*, 75, pp. 51–68.
- *Chang, Y.-Y., Gong, Y. & Peng, M.W. (2012) Expatriate knowledge transfer, subsidiary absorptive capacity, and subsidiary performance. *Academy of Management Journal*, 55, pp. 927–948.
- *Choi, J.-H. (2014) The HR-performance link using two differently measured HR practices. *Asia Pacific Journal of Human Resources*, 52, pp. 370–387.
- Chuang, C.H., Jackson, S.E. & Jiang, Y. (2016) Can knowledge-intensive teamwork be managed? Examining the roles of HRM systems, leadership, and tacit knowledge. *Journal of Management*, 42, pp. 524–554.
- Combs, J., Liu, Y., Hall, A. & Ketchen, D. (2006) How much do high performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59, pp. 501–528.
- *De Reuver, R., Van de Voorde, K. & Kilroy, S. (2019) When do bundles of high performance work systems reduce employee absenteeism? The moderating role of workload. *The International Journal of Human Resource Management*, 32(13), pp. 2889–2909.
- *De Wind, A., Geuskens, G.A., Ybema, J.F., Bongers, P.M. & van der Beek, A.J. (2015) The role of ability, motivation, and opportunity to work in the transition from work to early retirement—testing and optimizing the early retirement model. *Scandinavian Journal of Work, Environment and Health*, 41, pp. 24–35.
- *Edgar, F., Blaker, N.M. & Everett, A.M. (2021) Gender and job performance: linking the high performance work system with the ability–motivation–opportunity framework. *Personnel Review*, 50, pp. 47–63.
- Edgar, F. & Geare, A. (2005) HRM practice and employee attitudes: different measures—different results. *Personnel Review*, 34, pp. 534–549.
- *Endres, M.L. & Rhoad, K.T. (2016) What makes a high performer share knowledge? *Team Performance Management*, 22, pp. 269–283.
- *Fan, D., Wu, S., Su, Y. & Li, Y. (2021) Managing expatriates to achieve mutual benefits: an integrative model and analysis. *Journal of International Management*, 28(12), pp. 1–16. Available from: <https://doi.org/10.1016/j.intman.2021.100882>.
- Gardner, T.M., Wright, P.M. & Moynihan, L.M. (2011) The impact of motivation, empowerment, and skill-enhancing practices on aggregate voluntary turnover: the mediating effect of collective affective commitment. *Personnel Psychology*, 64(2), pp. 315–350.
- *Gilbert, C., De Winne, S. & Sels, L. (2015) Strong HRM processes and line managers' effective HRM implementation: a balanced view. *Human Resource Management Journal*, 25, pp. 600–616.
- *Gould-Williams, J.S. & Gatenby, M. (2010) The effects of organizational context and teamworking activities on performance

- outcomes: a study conducted in England local government. *Public Management Review*, 12, pp. 759–787.
- *Guerci, M., Radaelli, G., Siletti, E., Cirella, S. & Rami Shani, A.B. (2015) The impact of human resource management practices and corporate sustainability on organizational ethical climates: an employee perspective. *Journal of Business Ethics*, 126, pp. 325–342.
- Guest, D.E. (1997) Human resource management and performance: a review and research agenda. *International Journal of Human Resource Management*, 8, pp. 263–276.
- *Hassan, R., Johar, E.R. & Nor, N.M. (2020) Managing the obligation to stay through employee involvement, recognition and AMO model: a study among millennial employees. *Asian Journal of Business and Accounting*, 13, pp. 93–124.
- Hauff, S., Guerci, M., Dul, J. & van Rhee, H. (2021) Exploring necessary conditions in HRM research: fundamental issues and methodological implications. *Human Resource Management Journal*, 31, pp. 18–36.
- Heinis, S., Bamford, D., Papalexli, M. & Vafadarnikjoo, A. (2022) Services procurement: a systematic literature review of practices and challenges. *International Journal of Management Reviews*, 24(3), pp. 352–372.
- Ho, H. & Kuvaas, B. (2020) Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: the well-being paradox. *Human Resource Management*, 59, pp. 235–253.
- *Hong, W. & Gajendran, R.S. (2018) Explaining dyadic expertise use in knowledge work teams: an opportunity–ability–motivation perspective. *Journal of Organizational Behavior*, 39, pp. 796–811.
- Huselid, M.A. (1995) The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), pp. 635–672.
- *Innocenti, L., Pilati, M. & Peluso, A.M. (2011) Trust as moderator in the relationship between HRM practices and employee attitudes. *Human Resource Management Journal*, 21, pp. 303–317.
- *Jeng, D.J.F. & Hung, T.H. (2019) Comeback of the failed entrepreneur: an integrated view of costs, learning, and residual resources associated with entrepreneurial failure. *Journal of Small Business Strategy*, 29, pp. 23–35.
- Jiang, K., Lepak, D.P., Hu, J. & Baer, J.C. (2012) How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55, pp. 1264–1294.
- *Kang, M. & Kim, B. (2017) Motivation, opportunity, and ability in knowledge transfer: a social network approach. *Knowledge Management Research and Practice*, 15, pp. 214–224.
- *Katou, A.A. & Budhwar, P.S. (2010) Causal relationship between HRM policies and organisational performance: evidence from the Greek manufacturing sector. *European Management Journal*, 28, pp. 25–39.
- Kehoe, R.R. & Wright, P.M. (2013) The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, 39, 366–391.
- Kellner, A., Townsend, K., Wilkinson, A., Lawrence, S.A. & Greenfield, D. (2016) Learning to manage: development experiences of hospital frontline managers. *Human Resource Management Journal*, 26, pp. 505–522.
- *Kettinger, W.J., Li, Y., Davis, J.M. & Kettinger, L. (2015) The roles of psychological climate, information management capabilities, and IT support on knowledge-sharing: an MOA perspective. *European Journal of Information Systems*, 24, pp. 59–75.
- *Kim, H., Hur, D. & Schoenherr, T. (2015a) When buyer-driven knowledge transfer activities really work: a motivation–opportunity–ability perspective. *Journal of Supply Chain Management*, 51, pp. 33–60.
- *Kim, K.Y., Pathak, S. & Werner, S. (2015b) When do international human capital enhancing practices benefit the bottom line? An ability, motivation, and opportunity perspective. *Journal of International Business Studies*, 46, pp. 784–805.
- *Knies, E. & Leisink, P. (2014) Linking people management and extra-role behaviour: results of a longitudinal study. *Human Resource Management Journal*, 24, pp. 57–76.
- *Lai, H.M., Hsiao, Y.L. & Hsieh, P.J. (2018) The role of motivation, ability, and opportunity in university teachers' continuance use intention for flipped teaching. *Computers and Education*, 124, pp. 37–50.
- Lepak, D.P., Liao, H., Chung, Y. & Harden, E.E. (2006) A conceptual review of human resource management systems in strategic human resource management research. *Research in Personnel and Human Resources Management*, 25, pp. 217–271.
- *Liu, X. & Shaffer, M.A. (2005) An investigation of expatriate adjustment and performance: a social capital perspective. *International Journal of Cross Cultural Management*, 5, pp. 235–254.
- *Ma, Z., Long, L., Zhang, Y., Zhang, J. & Lam, C.K. (2017) Why do high-performance human resource practices matter for team creativity? The mediating role of collective efficacy and knowledge sharing. *Asia Pacific Journal of Management*, 34, pp. 565–586.
- *Malik, P. & Lenka, U. (2019) Exploring the impact of perceived AMO framework on constructive and destructive deviance. *International Journal of Manpower*, 40, pp. 994–1011.
- Marin-Garcia, J.A. & Martinez Tomas, J.M. (2016) Deconstructing AMO framework: a systematic review. *Intangible Capital*, 12, pp. 1040–1087.
- Messersmith, J.G., Patel, P.C., Lepak, D.P. & Gould-Williams, J.S. (2011) Unlocking the black box: exploring the link between high-performance work systems and performance. *Journal of Applied Psychology*, 96, pp. 1105–1118.
- *Mom, T.J., Chang, Y.Y., Cholakova, M. & Jansen, J.J. (2019) A multilevel integrated framework of firm HR practices, individual ambidexterity, and organizational ambidexterity. *Journal of Management*, 45, pp. 3009–3034.
- *Najafi-Tavani, Z., Robson, M.J., Zaefarian, G., Andersson, U. & Yu, C. (2018) Building subsidiary local responsiveness: (When) does the directionality of intrafirm knowledge transfers matter? *Journal of World Business*, 53, pp. 475–492.
- *Obeidat, S.M., Mitchell, R. & Bray, M. (2016) The link between high performance work practices and organizational performance: empirically validating the conceptualization of HPWP according to the AMO model. *Employee Relations*, 38, pp. 578–595.
- Pauwwe, J. (2009) HRM and performance: achievements, methodological issues and prospects. *Journal of Management Studies*, 46, pp. 129–142.
- Pickering, C. & Byrne, J. (2014) The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher Education Research and Development*, 33, pp. 534–548.
- *Pham, N.T., Phan, Q.P.T., Tučková, Z., Vo, N. & Nguyen, L.H. (2018) Enhancing the organizational citizenship behavior for the

- environment: the roles of green training and organizational culture. *Management and Marketing. Challenges for the Knowledge Society*, 13, pp. 1174–1189.
- *Pham, N.T., Tučková, Z. & Jabbour, C.J.C. (2019a) Green and hospitality industry: how do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-method study. *Tourism Management*, 72, pp. 386–399.
- *Pham, N.T., Tučková, Z. & Phan, Q.P.T. (2019b) Greening human resource management and employee commitment toward the environment: an interaction model. *Journal of Business Economics and Management*, 20, pp. 446–465.
- *Prieto Pastor, I.M., Santana, M.P.P. & Sierra, C.M. (2010) Managing knowledge through human resource practices: empirical examination on the Spanish automotive industry. *The International Journal of Human Resource Management*, 21, pp. 2452–2467.
- *Raineri, A. (2017) Linking human resources practices with performance: the simultaneous mediation of collective affective commitment and human capital. *The International Journal of Human Resource Management*, 28, pp. 3149–3178.
- *Raineri, A. & Valenzuela-Ibarra, S. (2021) The role of inter-team relational coordination in the high-performance work systems–team performance linkage. *The International Journal of Human Resource Management*, 33(18), pp. 3662–3702. [10.1080/09585192.2021.1928729](https://doi.org/10.1080/09585192.2021.1928729).
- *Rayner, J. & Morgan, D. (2018) An empirical study of ‘green’ workplace behaviours: ability, motivation and opportunity. *Asia Pacific Journal of Human Resources*, 56, pp. 56–78.
- *Rehman, W.U., Ahmad, M., Allen, M.M., Raziq, M.M. & Riaz, A. (2019) High involvement HR systems and innovative work behaviour: the mediating role of psychological empowerment, and the moderating roles of manager and co-worker support. *European Journal of Work and Organizational Psychology*, 28, pp. 525–535.
- *Schuster, T., Holtbrügge, D. & Engelhard, F. (2019) Knowledge sharing of inpatriates: empirical evidence from an ability–motivation–opportunity perspective. *Employee Relations: The International Journal*, 41, pp. 971–996
- Schwab, D.P. & Cummings, L.L. (1976) A theoretical analysis of the impact of task scope on employee performance. *Academy of Management Review*, 1, pp. 23–35.
- *Shahzad, K., Arenius, P., Muller, A., Rasheed, M.A. & Bajwa, S.U. (2019) Unpacking the relationship between high-performance work systems and innovation performance in SMEs. *Personnel Review*, 48, pp. 977–1000.
- Siddaway, A.P., Wood, A.M. & Hedges, L.V. (2019) How to do a systematic review: a best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, 70, pp. 747–770.
- *Siemsen, E., Roth, A.V. & Balasubramanian, S. (2008) How motivation, opportunity, and ability drive knowledge sharing: the constraining-factor model. *Journal of Operations Management*, 26, pp. 426–445.
- Subramony, M. (2009) A meta-analytic investigation of the relationship between HRM bundles and firm performance. *Human Resource Management*, 48, pp. 745–768.
- Sun, L.Y., Aryee, S. & Law, K.S. (2007) High-performance human resource practices, citizenship behavior, and organizational performance: a relational perspective. *Academy of Management Journal*, 50, pp. 558–577.
- Townsend, K., Cafferkey, K., Riaz, S. & Dundon, T. (2021) The hard problem: human resource management and performance. In: Sander, K., Yang, H. and Patel, C. (Eds), *Handbook of HRM as process research*, Edward Elgar Publishing, pp. 115–131.
- *Tuuli, M.M. & Rowlinson, S. (2009) Performance consequences of psychological empowerment. *Journal of Construction Engineering and Management*, 135, pp. 1334–1347.
- Van De Voorde, K., Paauwe, J. & Van Veldhoven, M. (2012) Employee well-being and the HRM–organizational performance relationship: a review of quantitative studies. *International Journal of Management Reviews*, 14, pp. 391–407.
- Van Iddekinge, C.H., Aguinis, H., Mackey, J.D. & DeOrtentiis, P.S. (2018) A meta-analysis of the interactive, additive, and relative effects of cognitive ability and motivation on performance. *Journal of Management*, 44, pp. 249–279.
- *Vashdi, D.R., Levitats, Z.S. & Grimland, S. (2019) Which transformational leadership behaviors relate to organizational learning processes? *The Learning Organization*, 26, pp. 176–189.
- *Wang, C.H., Baba, V.V., Hackett, R.D. & Hong, Y. (2019a) Employee-experienced high-performance work systems in facilitating employee helping and voice: the role of employees’ proximal perceptions and trust in the supervisor. *Human Performance*, 32, pp. 69–91.
- *Wang, X., Dolfsma, W. & van der Bij, H. (2019a) Individual performance in a cooperative R&D alliance: motivation, opportunity and ability. *R&D Management*, 49, pp. 762–774.
- Wright, P.M., Dunford, B.B. & Snell, S.A. (2001) Human resources and the resource based view of the firm. *Journal of Management*, 27(6), pp. 701–721.
- Wright, P.M., Gardner, T.M. & Moynihan, L.M. (2003) The impact of HR practices on the performance of business units. *Human Resource Management Journal*, 13, pp. 21–36.
- *Yildiz, H.E., Murtic, A., Zander, U. & Richtnér, A. (2019) What fosters individual-level absorptive capacity in MNCs? An extended motivation–ability–opportunity framework. *Management International Review*, 59, pp. 93–129.
- *Yu, W., Chavez, R., Feng, M., Wong, C.Y. & Fynes, B. (2020) Green human resource management and environmental cooperation: an ability-motivation-opportunity and contingency perspective. *International Journal of Production Economics*, 219, pp. 224–235.

How to cite this article: Bos-Nehles, A., Townsend, K., Cafferkey, K., & Trullen, J. (2023) Examining the Ability, Motivation and Opportunity (AMO) framework in HRM research: Conceptualization, measurement and interactions. *International Journal of Management Reviews*, 25, 725–739. <https://doi.org/10.1111/ijmr.12332>