

Ability, Motivation, Opportunity-oriented HR Practices, Organisational Citizenship Behaviour and Performance Outcomes Relationship in Project-based Construction Organisations

Bilge AKBIYIKLI¹
Şerife EYÜPOĞLU²
Rıfat AKBIYIKLI³

ABSTRACT

The purpose of this study is to contribute to the project management literature by testing a model that combines ability, motivation and opportunity (AMO) oriented human resource management practices, organizational citizenship behaviour (OCB) and performance outcomes in project-based construction organisations. The data were collected from questionnaires completed by 320 construction site civil engineers operating in the Marmara region of Turkey. The findings of the study indicate that there are positive relationships between AMO-oriented human resource practices and performance outcomes; however, organisational citizenship behaviour does not mediate these relationships.

Keywords: Ability motivation opportunity, organisational citizenship behaviour, performance outcomes, human resource management, project management; construction industry, civil engineers, Turkey.

INTRODUCTION

A vast body of research has been and is still being conducted to solve the ‘black box’ issue that questions the value human resource management (HRM) adds to organisations [1]. To investigate HRM’s contribution to organisational performance and achieve a higher competitive advantage, further thorough explorations on the relationship between HR practices and organizational performance is of importance [2]. This is especially vital in

Note:

- This paper was received on January 31, 2022 and accepted for publication by the Editorial Board on September 10, 2022.
- Discussions on this paper will be accepted by March 31, 2023.
- <https://doi.org/10.18400/tjce.1209164>

1 Near East University, Department of Business Administration, Nicosia, North Cyprus
bilgeakbiyikli@gmail.com - <https://orcid.org/0000-0001-9446-2342>

2 Near East University, Department of Business Administration, Nicosia, North Cyprus
serife.eyupoglu@neu.edu.tr - <https://orcid.org/0000-0001-7678-1729>

3 Düzce University, Department of Civil Engineering, Düzce, Türkiye
rifatakbiiyikli@duzce.edu.tr - <https://orcid.org/0000-0003-1584-9384>

industries where employees generally work on temporary contracts that face high demands on meeting time and cost expectations, such as the project-based temporary organisations of the construction industry.

The Turkish construction industry is one of the largest in the world which also has a significant impact on the overall economy of the country [3]. However, the identification of human resource (HR) practices that function best to achieve competitive advantage is not clear within the construction industry [4]. Different data produce different results and the large variety of HR practices and performance measures used within investigations make it difficult to reach firm and industry conclusions [5].

The HR practices that are adopted by project-based temporary organisations should support the project-based work conditions [6], [7] where management of resources and immediate knowledge sharing is vital. The effective management of workforce and how they add value in order to be strategically aligned with organisational goals is an issue of attention by project managers. Project managers face ongoing challenges in balancing the projects' immediate needs, learning opportunities, knowledge sharing and integration of novelties of the industry into the organisational structure they manage [8], [9]. In construction projects, the fundamental and traditional HRM methods are organisational planning, staffing, team building and maintaining high morale levels. Project managers in Turkish construction sites are responsible for applying these functions. Thus, project managers must be capable of understanding HR parameters and work closely with HR departments. The manpower of projects is one of the fundamental inputs to run the transformation and value creation process. The relationship between the social system and technical system is administered through the management system by project managers for a successful project. The structures of the teams on a construction site are loosely knitted temporary coalitions and they are subject to change due to their temporariness, new recruits, and leavers during the project.

The production location and the non-repetitive feature of a project cause the external factors to shape the future of construction projects. Many construction managers in Turkey apply hard HRM features concentrating on the relevant resources through adopting a rational approach that considers the worker as a cost to the organisation and the project. Project managers affect and transform the project at hand and influence its site engineers to solve problems that are faced during a project, which is why research on HRM issues within the construction industry is of high importance.

In context with the above, it becomes imperative to incorporate new HR perspectives in this field of study to broaden the understanding of HR practice relationships with performance outcomes. According to Pak et al. [10], the existing literature on HRM in relation to ability, motivation, opportunity (AMO) and their effective impact on employees is unclear. Therefore, practitioners face difficulties deciding which approaches and efforts will alter employee efficiency and effectiveness in various industries, including project-based temporary organisations where restrictions caused by time, cost, budget and quality are high [10], [11], [12]. Hence, research concentrating on HRM issues within project-based temporary organisations are limited [7], [12], [13], [14]. The AMO framework proposes three dimensions for employees to perform well. Employees are able to execute their duties with high performance when they have the necessary skills to do the job (ability), are willing to do the job (motivation), and are given the necessary support and room for expression

(opportunity) [15]. Having observed the above in the existing literature, ability, motivation and opportunity-oriented HR practices have been identified as parameters which will add significant value to this field of study. The relationships between ability, motivation, opportunity-oriented HR practices and performance outcomes have not been investigated in project-based Turkish construction organisations on site level.

A previous study on ability, motivation and opportunity-oriented HR practices, job satisfaction and performance outcomes relationship in the Dutch public sector has revealed valuable results. However, it is noted that other important factors such as employee attitudes and behaviours should be an area of additional consideration [16]. Organisational citizenship behaviour (OCB) refers to the discretionary behaviour of employees that is not directly or indirectly recognised by the formal reward system but in the aggregate elevates organisational effectiveness [17]. Industrial managers have a growing interest in OCB due to positive results being revealed by investigations carried out on the relationship between OCB and employee performance in several industries [18], [19]. Concerning the construction industry, OCB is evident in large construction organisations that have more than 250 employees; however, OCB's existence is less noticeable in smaller organisations. Although large construction organisations have experienced an increase in some dimensions of performance due to OCB, authenticating this outcome has not been attainable since studies on the matter within the industry are both academically and professionally inadequate [19].

Paauwe et al. [20] suggested a multidimensional view on organisational performance where the possible competitive mechanisms are pointed out to be efficiency, effectiveness, fairness, quality, and innovation. Project-based temporary organisations consist of diverse resources and competencies to handle the complex nature of projects [8], [21], [22]. According to Sydow et al. [8] there are four levels in which projects occur: 1) organisational units, in which the project is embedded in a functional or business unit; 2) entire organisations, in which the organisation is entirely based on projects; 3) networks that provide inter-organisational cooperation on projects; and lastly, 4) organisational fields in a particular region or industry that provide a specific context for project-based organising [22]. This research acknowledges projects at the unit level, where the performance outcomes refer to the overall effectiveness, efficiency and fairness of units executed by site civil engineers in construction organisations.

In light of the above, this study will shed light on the gaps in the literature, through testing a model that investigates the relationships between ability, motivation, opportunity-oriented HR practices and performance outcomes both individually and through the mediating lens of OCB. This combination of variables has not been a topic of study in Turkey while addressing construction organisations, which brings about a unique approach by this research.

Among the roles of a site civil engineer is to manage different units of a construction firm and/or parts of a construction project, where they provide technical advice, supervision on site and ensure projects are finalised within a given time and budget. Certain skills, abilities and knowledge are expected of engineers to execute their responsibilities such as teamwork and relationship building, technical skills, problem solving, effective communication, attention to detail and a solid understanding on how actions may affect the profitability of a certain project. With the high expectations organisations have of their engineers who are under time and budget constraints, having the right people in the right place, sustaining their motivation, and making them feel that they matter to the organisation by facilitating them with an environment of opportunities are highly important. Since site civil engineers have

managerial duties; they are both the executors of their roles and can also be seen as functions that view how fair, effective and efficient units are.

AMO-oriented HR practices and performance research has high significance for the region and the industry in general, as it helps to determine the current situations and act as a means to enhance present systems and processes for further developments concerning site civil engineers. Having presented AMO-oriented HR practices as a new outlook in relation to performance outcomes within the unique idiosyncratic nature of the Turkish construction industry, this study carries a significant degree of novelty. The purpose of the present study is to fill the existing gap in the project-management literature by examining whether a positive correlation is detectable between ability, motivation, opportunity-oriented HR practices and performance outcomes and also to investigate the possible mediating effect of OCB within such relationships through site civil engineers working in project-based temporary organisations of the Turkish construction industry. Identifying functional HR parameters and their relationships with performance are vital in sustaining the existing and growing construction economy.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Human Resource Management and Organizational Performance

Although a substantial volume of research has taken place to examine the relationship between human resource management practices and organizational performance [23], [24] there is still significant lack of knowledge about how this relationship occurs [1].

Industries require different skills and knowledge. HR practices develop firm specific employee competencies to sustain competitive advantage [25]. Complementing this view, Schuler & Jackson [26] saw HR practices as systems that attracts, develops, motivates and retains employees to ensure the effective implementation of policies and the survival of the organization and its members. Although there is no agreement on how HR practices affect performance, many researchers believe that HR practices alter performance through their impact on staff attitudes and behaviour which results in increased productivity and quality of goods and services and thus improves organizational financial performance [27], [28], [29].

HR practices that improve employee skills and attitudes stimulate positive behaviour, increase motivation, and give employees enlarged responsibilities to fully use their existing skills and abilities are suggested to increase company performance [30], [31], [32]. Appropriate HR practices and strategies that are organised as a bundle have a positive direct impact on human resource outcomes (turnover, absenteeism, job satisfaction) which lead to higher positive organizational outcomes (productivity, quality, service), financial accounting outcomes (return of assets, rate of return, profitability index) and capital market outcomes (stock price, growth, returns). These are the four possible measurements for organizational performance [33]. Nevertheless, scholars debate on which bundled HR practices specifically succeed in altering organizational performance and how the organisational performance of firms can be identified in the best possible way in practice [28], [34], [35].

Drawing on two distinct dimensions, Paauwe et al. [20] suggested a multidimensional view on organizational performance. The first dimension, economic rationality, refers to the competitive mechanisms which are efficiency, effectiveness, quality, and innovation. The

second dimension, relational rationality, pays attention to the institutional mechanisms such as fairness and legitimacy. HR practices will have no strategic impact if they lack in their effectiveness in bringing out positive attitudes and behaviours among employees as achieving organizational objectives are in line with their commitment [36] and it is therefore essential to pay attention to the direct effect HR practices have on employees [29], [33], [37], [38]. Huselid [32] categorized personnel selection, performance appraisal, incentive compensation, formal grievance procedures, information sharing, labour/management participation, recruiting intensity and more training hours as relevant HR practices. Similarly, Delaney & Huselid [39] highlighted these HR practices as recruitment and selection, training and development, participation, and reward.

2.2. Ability, Motivation and Opportunity Framework

Starting with Huselid's [32] study, where he disclosed that HR practices were related to turnover, accounting profits and a firm's market value, a high interest in the HRM-performance research has focused on determining the relevant HR practices for organisations. Furthermore, HRM research in the more recent years focuses on bundles of HR practices in examining the effects of HRM on employee and organizational outcomes (the systems approach) rather than the traditional way (instrumental approach) which emphasizes the impact of individual HR practices [40].

The origins of the AMO framework have derived from a previous model proposed by Bailey [30] which was later developed by Appelbaum et al. [41]. With its growing popularity the AMO framework has received close attention in the literature for the HRM-performance link [20]; proposing that employees perform well when they have the necessary skills to do the job (ability), are willing to do the job (motivation) and are given the environment to be heard [15] and are provided the necessary support and room for expression (opportunity to perform). A positive relationship has been found between HR practices that improve employees' ability, motivation and opportunity and better performance services, higher quality, greater financial performance, lower turnover, and stronger commitment [32], [42], [43], [44].

The ability-oriented HR practices aim to alter employee competences and build on their existing expertise for performing their tasks effectively [45]. These practices positively affect individual performance, due to their impact on achieving increased job-specific knowledge and skills, which often include recruitment and selection, extensive training and development and job rotation [39], [45], [46], [47]. Recruitment and selection and training and development are the two HR practices selected to measure ability [45], [48]. Recruitment and selection allow organization to attract, choose and place the most suitable candidates for a certain position where in return employees may realise their full potential by being placed in a right position. Training and development opportunities build on existing employee knowledge and add new knowledge and skills. Employees that receive regular training and development opportunities are likely to feel valued with less job and task ambiguity [46]. In the construction context, recruitment and selection can enable the construction projects to have the right workforce with the right technical skills needed, training and development are crucial for building on existing knowledge as well as to keep up to date with the strict health and safety regulations required in the industry. According to Mohammad et al. [49]

recruitment and selection and training and development have a direct impact on organizational performance. In relation to the social exchange theory [50], exercising ability-oriented HR practices make employees feel that the organisation supports and benefits them while creating a higher sense of belongingness where, in return, employees are likely to demonstrate favourable attitudes [46]. Based on the above information we hypothesize that:

H1a: There is a positive relationship between ability-oriented HR practices and performance outcomes in project-based construction organisations.

The motivation-oriented HR practices are designed to build on individual achievements to attain specific job-related objectives including performance evaluation, incentives, benefits, career-advancement schemes and a diligent appraisal. Reward schemes are important as they lead individuals to behavioural decisions [45], [51]. All above-mentioned practices aim to improve the motivation of employees in order to encourage efforts in meeting organisational goals and enhance the overall performance. Extrinsic and intrinsic motivations are the two types of motivation. Extrinsic factors are more related to economic rewards whereas intrinsic factors are more related to an employee's values and interests [52]. Performance appraisal and rewards are the two HR practices selected to measure motivation [45], [48]. Performance appraisal relates to both financial and non-financial incentives. It is used by organisations to fairly evaluate activities which organizations seek to assess employees and develop their competence, enhance performance, and distribute rewards [53]. Rewards refer to what organisations offer their employees for the services they provide. Rewards need to be designed in a way to meet employee expectations to receive better employee performance. They come in the forms of salary, recognition, promotion advancement as well as personal growth [54], [55]. In the construction context, performance appraisal can form the basis for engineers' further development areas and create a feedback culture where employees are informed both on their performance and how their work contributes to the unit achievement goals. Rewards are an important means of motivation considering the focused working conditions and high responsibility of engineers. These practices make it clear for the employees to understand organisational expectations in relation to their tasks and in which way their contributions through these tasks are rewarded. Employees tend to behave in line with organisational objectives when sensing the application of evaluation schemes and existence of reward programs. This results in increased employee productivity and decreases turnover signalling a social exchange relationship [46], [56], [57], [58]. Based on the above information we hypothesize that:

H1b: There is a positive relationship between motivation-oriented HR practices and performance outcomes in project-based construction organisations.

The opportunity-oriented HR practices delegates the decision-making authority and fosters employee voice where employees feel they are involved [59]. It is suggested that organizations must provide the environment for dialogue among hierarchies and create systems for knowledge sharing as well as decentralised decision-making which will enable employees to enjoy higher levels of autonomy while performing their tasks [2], [46], [60]. Opportunity-oriented practices are participation processes that function formally. Regular communication and information sharing as well as autonomy in task-related decisions are also included [61], [62]. Autonomy and participation are the two HR practices selected to measure opportunity [45], [48]. Autonomy is the freedom employees have to make choices for their own behaviour regarding schedules, deadlines, and projects with little direction from

others [63]. Participation refers to the process of employees being involved in the decisions regarding their work and its conditions where the decision-making process is a shared power between employees and superiors [64]. Organizations that are willing to foster a participative environment should improve the involvement of employees in decision making processes, knowledge sharing, job enrichment and horizontal communication [45]. These practices enable employees to find more meaning in their jobs as they foster teamwork and cooperative integration among employees [47]. Autonomy is needed for engineers working in an organised yet complex environment such as the construction site and lastly, participation is highly important for a clear communication, voicing opinions and being a part of work-related decisions. Making employees feel that they are being treated favourably through communication, autonomy and participation would express their commitment to the organisation with positive behaviour in return as implied by social exchange [62]. Based on the above information we hypothesize that:

H1c: There is a positive relationship between opportunity-oriented HR practices and performance outcomes in project-based construction organisations.

2.3. Human Resource Practices and Organizational Citizenship Behaviour

In order to determine the relationship between HR practices and performance the role of organizational citizenship behaviour (OCB) is a powerful factor [18] which is achieved through maximised employee efforts and contributions [65]. In its simplistic way OCB is defined by Organ [17] (p.4) as “individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization”. Researchers advise organizations to pay close attention to promoting OCB due to its effect on outcomes such as sales performance, product quality, overall profits and operating efficiency and performance quality [66], [67], [68]. OCB is composed of altruism (employees helping one another), civic virtue (employees staying informed with organisational issues), conscientiousness (employees being careful and diligent), courtesy (employees exercising considered behaviour prior to taking action), and sportsmanship (employees seeing over insignificant matters) [17].

HRM systems are composed of aligned and bundled HR practices that aim to achieve the goals of the organization [45]. Specifically selected HR practices in bundles can create committed, motivated, and satisfied employees [69] and are believed to function better rather than individually, leaving employees exposed to multiple practices simultaneously [32], [45]. Bundles are also seen as the primary unit of analysis when examining the impact HRM systems have on both individual and organizational level outcomes [32], [43], [70].

Researchers pointed out that HR practices have the ability to enhance OCB [71], [72]. Carefully recruited, trained, empowered, and motivated employees are expected to perform high levels of OCB. Creating and maintaining a positive climate through HR practices within an organization ignites employees' will to perform extra-role behaviour [71]. HR practices have the power to define the relationship between employee and employer thus serving as a source of motivation for employees to exercise OCB [73]. The relationships characterised by social exchange have been proven to increase the exercise of extra-role behaviour [50]. It is also highlighted that through social exchange constructive changes in behaviour will eventually lead to an improved employee and organisational performance [74], [75].

Practices such as recruitment and selection make employees feel that they are the chosen elite [76], where training and development pass on a message that the organization is being committed to the growth of its employees. Performance appraisal, rewards and incentives create a sense of recognition and fair treatment, and lastly, practising employee participation in decision-making and autonomy adds to the feeling of importance and freedom in executing their tasks [77].

2.4. Organizational Citizenship Behaviour and Organisational Performance

OCB's capacity to improve the productivity level of employees facilitate the efficient use of organizational resources while enhancing teamwork effectiveness, increasing workplace desirability and attracting competent employees [67] are a result of the employee-employer relationship which stimulates the extra-role behaviour in employees through social exchange [50], [76] rather than a purely economic one. Extra-role behaviours are crucial in the sense that employees go beyond the call of duty to helping co-workers and suggesting ideas to improve the functioning of the organization. The employee with extra-role behaviour also creates an example on group level where higher individual performance is seen to positively influence group performance thus overall effectiveness of an organization [17], [78].

The employee-employer relationship is linked to the relationship between HR practices and OCB which is the fundamentals of the social exchange theory, taking into consideration employees' social interaction and the benefits they receive in exchange of their contribution [79]. Reciprocity is the underlying core of social exchange meaning favours being returned by employees who receive benefits [50]. It is a socio-emotional exchange relationship shaped by mutual trust, commitment and obligation among employees and employers [80]. Employees that enjoy the high level of social exchange are likely to demonstrate behaviours and attitudes that match organisational values and interests [81]. Employees with a better relationship with their managers show higher level of OCB but those managers sometimes fail to realize the impact OCB has on performance [17], [67]. It is also indicated that OCB enhances the effectiveness and efficiency of an organisation, which is vital to improve the organisation's capability of adapting itself to changes in the environment [82]. Researchers argue that OCB is the main source distinguishing best-performing organisations from average ones. Employees that engage in OCB help to increase the quality of services [76], [83].

2.5. Organisational Citizenship Behaviour as a Mediator

The AMO framework [41] has been used in many industries such as the service sector, construction, manufacturing and financial sectors, marketing, consultancy, and production [52], however, the identification of which and how HR practices function best and create extra-role behaviour is unclear within the construction industry [4]. According to the AMO framework organizational performance is affected by HR practices as they increase employees' knowledge, skills, abilities, motivation and enable employee empowerment. The key role of HR practices in this respect is to eliminate any barrier that stops employees from exercising discretionary efforts [76]. Employees' willingness in creating extra-role behaviour is triggered through HR practices that create and maintain a positive climate. Carefully recruited, trained, motivated, and empowered employees are expected to perform high levels

of OCB [44], [76]. Through social exchange theory, constructive changes in behaviour will eventually lead to an improved employee and organisational performance [75]. Therefore, employees go beyond the call of duty to help their co-workers and suggest ideas to improve the functioning of the organization. As a result, higher individual performance and group performance increases the overall effectiveness of the organization [17], [78].

Regarding the black-box issue of the HRM-performance linkage, researchers suggested examining this relationship through mediating variables concerning employee attitudes and behaviours [45]. In this respect, OCB is a powerful factor in determining the relationship between HR practices and performance [18] which is achieved by taking full advantage of employees' contributions [65]. Performance outcomes such as the effectiveness and efficiency of an organization which are enhanced by OCB are also vital to improve the organization's capability in adapting itself to changes in the environment [82]. Chiang & Hsieh [84] in their study on the hotel industry in Taiwan found a significant mediating effect of OCB among perceived organizational support and job performance confirming OCB being a potential mediator between HR practices and outcomes. Research conducted on employees of several hotels in China [18] revealed that OCB mediated the relationship between high performance human resource practices, turnover, and productivity [85]. Moreover, Taamneh et al. [76] found that OCB partially mediated the relationship between HR practices and organizational performance in the banking sector in Jordan. Lastly, Cesário & Magalhães [86] examined the Portuguese public administrations and found that OCB mediates the relationship between HR practices and turnover intention.

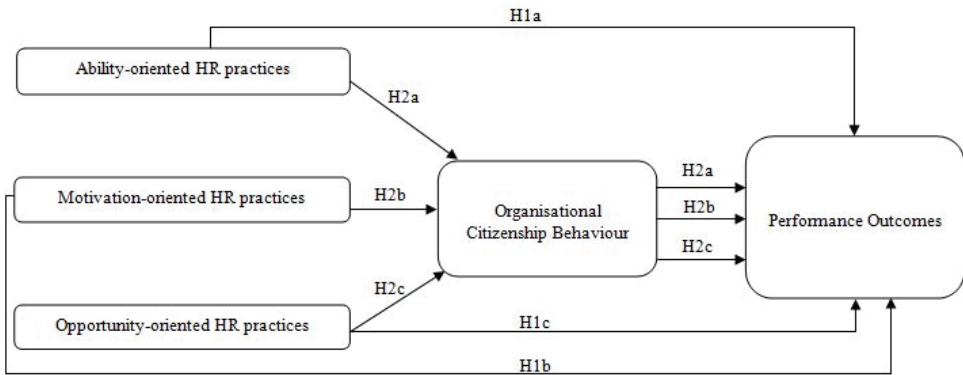


Figure 1 - Research Model

It is believed that the published research that investigates which and how HR practices impact organizational performance is limited, however, researchers suggest that OCB contributes to the effective and efficient functioning of the organization [17], [78]. It is unclear whether similar positive outcomes will occur in the construction industry. Thus, to explore the effect of OCB we hypothesize that:

H2a: The positive relationship between ability-oriented HR practices and performance outcomes is mediated by OCB in project-based construction organisations.

H2b: The positive relationship between motivation-oriented HR practices and performance outcomes is mediated by OCB in project-based construction organisations.

H2c: The positive relationship between opportunity-oriented HR practices and performance outcomes is mediated by OCB in project-based construction organisations.

3. MATERIALS AND METHODS

3.1. Sample and Data Collection

To test the stated hypotheses, the current research adopted a quantitative approach to reveal statistical confirmation of variables and the conceptual model. According to the Turkish Architects and Engineers Chamber (TMMOB) there are 133.583 civil engineers in Turkey. The Marmara region is home to some of the largest construction firms that lead the construction economy, and the construction industry is one of the largest sectors of the Turkish economy [87]. Any research that is to be conducted in this region will help to determine the current situations and may act as a means to enhance present systems and processes for further developments. The snowball sampling method was used for the data collection process. The benefits of using snowball sampling are that finding samples are quick and cost-effective, and participants hesitate less about anonymity knowing the request comes from reliable sources [88].

Data has been collected via the Chambers of Civil Engineers (IMO) of the Marmara region which in total consists of 46.538 civil engineers. Among the 46.538 civil engineers 1.900 are managing site civil engineers currently working on various sites. The online questionnaire, which included a consent form and assurance of anonymity, was distributed via the Chambers. According to Sekaran & Bougie [89], the suggested sample size for a population of 1.900 is 320, which coincide with the received sample size for the present study.

3.2. Measures

In order to measure each variable, a structured questionnaire that consisted of demographic questions and three main sections was used. Questionnaires are methods that can bring forth answers that are easy to organise and analyse. Administering questionnaires anonymously encourages respondents to be truthful when answering the questions. Reaching respondents that are afar is also another advantage if the questionnaire is distributed via electronic mediums which are also economical [90]. Online designed questionnaires are practical tools that allow the researcher to collect the needed data immediately. While responses accumulate on the database the researcher is able to conduct preliminary analyses on the so-far collected data if needed [91].

The questionnaire's first section covered the demographic questions that include age, education level, years of service in the industry and years of service in the current organisation. In the second section participants were asked to score a 5-point Likert scale from 1 to 5 (1: strongly disagree, 5: strongly agree). This part covered the main body of the questionnaire that was divided into 3 main scales including 84 items in total. The distribution of the questionnaire items is outlined below, and the items are represented in detail in Appendix 1.

Firstly, the AMO-oriented HR practices were measured through a scale which included a total of 39 items [92]. For ability 14 items, for motivation 13 items, and for opportunity 12 items were used. The second scale measured OCB with a total number of 24 items [93] and lastly, the third scale covered the performance outcomes with a total of 21 items [94].

3.3. Data Analysis

Data (n=320) was analysed using IBM SPSS 23 and SPSS PROCESS Macro. In order to summarise the data set, the mean, median, standard deviation and interquartile range value scores of the scales were calculated for the descriptive statistical analysis. Categorical variables were presented as percentages. In addition, Pearson correlation coefficients were calculated to determine the direction and degree of the relationship between the variables. Also, traditional regression-based mediation (simple mediation) analysis was performed to estimate the mediating effect of Ability-oriented HR practices (AB), Motivation-oriented HR practices (MO) and Opportunity-oriented HR practices (OP) on Performance Outcomes through Organisational Citizenship Behaviour. According to Baron & Kenny's steps [95], a simple mediation model analysis consists of three regression models: $X \rightarrow Y$, $X \rightarrow M$, and $X + M \rightarrow Y$. In the models, the explanatory variable is indicated by (X), mediating variable by (M) and the response variable by (Y). In order to prove the existence of the mediating effect, the provision of the three conditions is necessary [96].

The indirect effect in the models was tested using the bootstrap test [97]. The bootstrap test analysis results are based on 95% confidence intervals with 5000 samples with replacement. The bootstrap test is a nonparametric alternative resampling technique to test the mediating effect which includes continually sampling from the data and estimating the indirect effect for each sample. By continuing this process several times (usually between 1000 and 5000), a confidence interval for indirect effect on the response variable by the mediator is constructed using an empirical approximation of the sampling distribution of indirect effect [97]. The bootstrapping method also allows the Sobel test to be carried out and increases the test's power. Sobel test [98] was used to determine if Organisational Citizenship Behaviour mediated the association between Ability-oriented HR practices (AB), Motivation-oriented HR practices (MO) Opportunity-oriented HR practices (OP) and Performance Outcomes. Sobel test searches whether explanatory and response variables have a significant indirect relationship, meaning that it explores if the effect of the explanatory variable of the response variable is significantly decreased by the inclusion of a mediating variable.

Hayes's Process Macro automatically calculates the relevant statistics and inference methods without requiring additional effort and programming skills. Structural equation modelling (SEM) applies analyses as Process handles while it needs more code writing skills and requires obtaining various statistics that Process obtains automatically. Also, not all SEM programs can produce all statistics Process computes; nor apply bootstrapping method in a way that makes easy inference. Regression-based approaches are not applied simply through the use of SEM, but with Process they are applied in a simple and understandable manner [99]. SEM is an effective approach that can improve mediation analysis in different ways. SEM's ability to handle both model specification and missing data professionally, and its ability to account for random measurement error in estimating effects on latent variables, makes it attractive. However, its complexity presents various difficulties and therefore inexperienced analysts may encounter some erroneous results when using it [99]. For models

based entirely on observed variables, the results will largely be the same. Therefore, regression-based bootstrapping methods (Process Macro) are recommended for models that rely entirely on observed variables. In the current study, Hayes's Process Macro was preferred as the models are also based on observed variables [99].

Within the scope of validity and reliability analyses for the scales, first Kaiser-Meyer Olkin (KMO) coefficient and Bartlett's Sphericity Test were computed to check whether the dataset was appropriate for factor analysis and then Explanatory Factor Analysis (EFA) was performed using principal component analysis with varimax rotation to examine whether the items were loaded on the assumed underlying factors for construct validity [100]. Cronbach's alpha values were calculated as an internal consistency coefficient to evaluate the reliability of the scales. In this study, p-value less than 0.05 was considered statistically significant.

4. RESULTS

This section presents the data analysis results, including the descriptive statistics about demographic variables. Correlation analyses, item analysis and reliability of scales are demonstrated. Then, explanatory factor analysis results and mediation analysis results are represented.

The demographic information regarding the participants is presented in Table 1 below. These results are similar to the current demographic structure of the Turkish construction industry. The Turkish construction industry is also male-dominated where the age range generally appears to be between 25-50. Similarly, the majority of the civil engineers in Turkey hold only undergraduate degrees [101], [102], [103]. Considering the working experience in the sector and in the current organisations, it is evident that the majority of the respondents have been working within the sector between 6 to 10 years, and 3 to 5 years within their current organisation. This information coincides with the temporary nature of the project-based construction organisations.

The mean (\bar{x}), median, standard deviation (s), interquartile range values (IQR), minimum (min) maximum (max) of the AB, MO, OP, OCB and PO scale scores have been calculated in Table 2. When the descriptive statistics presented in Table 2 below are examined; the scores of the scales ranged from 1 to 5, the mean score of the Organizational Citizenship Behaviour scale was the highest ($\bar{x}=4.35$; $s=0.56$), and the average score of the Motivation-oriented HR practices scale was the lowest ($\bar{x}=3.01$; $s=1.16$).

When item, validity and reliability analyses of the Ability-oriented HR practices scale were conducted, it was observed that the general Cronbach's Alpha coefficient (internal consistency coefficient) of the scale was found to be quite high with 0.958. The item-total correlation values of the items in the scale ranged from 0.648 to 0.847. Cronbach's Alpha coefficients obtained when the items in the scale are deleted separately vary between 0.954 and 0.958, which are not higher than the general Cronbach's Alpha coefficient of 0.958. Cronbach's Alpha coefficients for recruitment and selection, training and development subscales were obtained as 0.935 and 0.949, respectively. As a result, when the results of all item analysis were evaluated, it was determined that all items were suitable for use. The Kaiser Mayer Olkin (KMO) of Sampling Adequacy value of Ability-oriented HR practices scale was obtained as 0.940. This value shows that the sample is sufficient for explanatory factor analysis. The result of Bartlett's sphericity test ($\chi^2=4468.974$; $df=666$, $p=0.001$) was found

to be statistically significant. Varimax rotation was used in the explanatory factor analysis. There are two sub-scales in the original scale. As a result of factor analysis, the scale was gathered under two factors. The first factor alone accounted for 42.96% and two factors together explain 73.57% of the total variance. Item factor loadings vary between 0.631 to 0.879.

Table 1 - Demographic information

Variable	Categories	Frequency	%
Gender	Female	90	28.13
	Male	230	71.87
Age	20-29	103	32.19
	30-39	147	45.94
	40-49	55	17.19
	50-59	11	3.43
	>60	4	1.25
Education level	Undergraduate	223	69.69
	Master degree	85	26.56
	PhD degree	12	3.75
Working experience in the sector (year)	<1	20	6.25
	1-2	31	9.69
	3-5	59	18.44
	6-10	110	34.38
	11-14	49	15.31
	15-19	22	6.87
	>20	29	9.06
Working experience in the current organization (year)	<1	68	21.25
	1-2	64	20.00
	3-5	85	26.56
	6-10	68	21.25
	11-14	18	5.63
	15-19	8	2.50
	>20	9	2.81

Table 2 - Descriptive statistics of the scales

Scale	Cronbach's α	Min-max	$\bar{x}(s)$	Median (IQR)
Ability-oriented HR practices (AB)	0.958	1-5	3.36(1.01)	4.00(1.50)
Motivation-oriented HR practices (MO)	0.967	1-5	3.01(1.16)	3.00(2.00)
Opportunity-oriented HR practices (OP)	0.967	1-5	3.34(1.09)	4.00(1.50)
Organisational Citizenship Behaviour (OCB)	0.953	1-5	4.35(0.56)	4.50(1.00)
Performance Outcomes (PO)	0.967	1-5	3.93(0.79)	4.00(1.00)

After conducting item, validity, and reliability analyses of the Motivation-oriented HR practices scale, it was seen that the general Cronbach's Alpha coefficient of the scale was found to be quite high with 0.967. The item-total correlation values of the items in the scale ranged from 0.709 to 0.874. Cronbach's Alpha coefficients obtained when the items in the scale are deleted separately vary between 0.963 and 0.967, which are not higher than the general Cronbach's Alpha coefficient of 0.967. Cronbach's Alpha coefficients for performance appraisal and rewards sub-scales were obtained as 0.954 and 0.937, respectively. As a result, when the results of all item analysis were evaluated, it was determined that all items were suitable for use. The KMO value of the Motivation-oriented-HR practices scale was obtained as 0.957. This value shows that the sample is sufficient for explanatory factor analysis. The result of the Bartlett's sphericity test ($\chi^2=4379.812$; $df=78$, $p=0.001$) was found to be statistically significant. There are two sub-scales in the original scale. As a result of factor analysis, the scale was gathered under two factors. The first factor alone accounted for 41.11% and two factors together explain 77.88% of the total variance. Item factor loadings vary between 0.650 to 0.839.

As a result of item, validity and reliability analyses of the Opportunity-oriented HR practices scale, the general Cronbach's Alpha coefficient of the scale was found to be quite high with 0.967. The item-total correlation values of the items in the scale ranged from 0.711 to 0.883. Cronbach's Alpha coefficients obtained when the items in the scale are deleted separately vary between 0.963 and 0.967, which are not higher than the general Cronbach's Alpha coefficient of 0.967. Cronbach's Alpha coefficients for autonomy, participation sub-scales were obtained as 0.950 and 0.939, respectively. As a result, when the results of all item analysis were evaluated, it was determined that all items were suitable for use. The Kaiser Mayer Olkin (KMO) value of Opportunity-oriented HR practices scale was obtained as 0.957. This value shows that the sample is sufficient for explanatory factor analysis. The result of the Bartlett's sphericity test ($\chi^2=4379.812$; $df=78$, $p=0.001$) was found to be statistically significant. This shows that the data are suitable for explanatory factor analysis. There are two sub-scales in the original scale. As a result of factor analysis, the scale was gathered under two factors. The first factor alone accounted for 41.11% and two factors

together explain 77.88% of the total variance. Item factor loadings vary between 0.645 to 0.871.

According to item, validity and reliability analyses of the Organizational Citizenship Behaviour scale, the general Cronbach's Alpha coefficient of the scale was found to be quite high with 0.953. The item-total correlation values of the items in the scale ranged from 0.621 to 0.730. The Cronbach's Alpha coefficients obtained when the items in the scale are deleted separately vary between 0.951 and 0.953, which are not higher than the general Cronbach's Alpha coefficient of 0.953. As a result, when the results of all item analysis were evaluated, it was determined that all items were suitable for use. The KMO value of the Organizational Citizenship Behaviour scale was obtained as 0.936. The result of the Bartlett's sphericity test ($\chi^2=5598.522$; $df=276$, $p=0.001$) was found to be statistically significant. Factor analysis indicated that one factor explains 67.75% of the total variance. Item factor loadings vary between 0.344 to 0.848.

Lastly, according to the item analysis of the Performance Outcomes scale, the general Cronbach's Alpha coefficient of the scale was found to be quite high with 0.967. The item-total correlation values of the items in the scale ranged from 0.590 to 0.823. Cronbach's Alpha coefficients obtained when the items in the scale are deleted separately vary between 0.963 and 0.965, which are not higher than the general Cronbach's Alpha coefficient of 0.967. Cronbach's Alpha coefficients for effectiveness, efficiency, fairness sub-scales were obtained as 0.918, 0.926, and 0.906, respectively. As a result, when the results of all item analyses were evaluated, it was determined that all items were suitable for use. The KMO value of the Performance Outcomes scale was obtained as 0.961. This value shows that the sample is sufficient for explanatory factor analysis. The result of the Bartlett's sphericity test ($\chi^2=5702.425$; $df=210$, $p=0.001$) was found to be statistically significant. As a result of the factor analysis, the scale was gathered under three factors. The first factor alone accounted for 30.93%, two factors together explain 51.19% of the total variance, and all three factors explain 69.73% of the total variance. Item factor loadings vary between 0.459 to 0.844.

4.1. Hypotheses Testing

Correlation analysis was conducted to test the proposed hypotheses (H1a, H1b, H1c) and mediation analysis technique to test the mediating effects in the stated hypotheses (H2a, H2b, H2c). The Pearson correlation coefficients between the variables are shown in Table 3 below. The correlation analysis results indicate significant moderate positive relationship between ability-oriented HR practices and performance outcomes ($r=0.575$, $p<0.01$). Based on these results, our first hypothesis, H1a is supported by the data. Moreover, according to correlation analysis results, it is observed that there is a statistically significant moderate positive correlation between motivation-oriented HR practices and performance outcomes ($r=0.479$, $p<0.01$) which supports the H1b hypothesis. Lastly, in line with the analysis results, there is a statistically significant moderate positive correlation between opportunity-oriented HR practices and performance outcomes ($r=0.499$, $p<0.01$). This indicates that the H1c hypothesis is supported. The results stating that H1a, H1b and H1c are supported by the data is also consistent with the regression analysis results that are revealed in the Model 1 sections of Table 4,5 and 6 ($p<0.05$).

Table 3 - Pearson correlation coefficients between the variables

Variables	AB	MO	OP	OCB	PO
AB	1				
MO	0.859**	1			
OP	0.816**	0.871	1		
OCB	0.100	0.036	0.084	1	
PO	0.575**	0.479**	0.499**	0.384**	1

*p<0.05, **p<0.01; (n=320)

Table 4 below shows mediation analysis results for the effect of ability-oriented HR practices on performance outcomes through organisational citizenship behaviour as a mediator variable. In the mediation Model 1, the regression of ability-oriented HR practices on performance outcomes, disregarding the mediator (organisational citizenship behaviour), was significant (B = 0.444, t= 12.542, p=0.000<0.05). Then, the analysis results in Model 2 showed that the regression of ability-oriented HR practices on the mediator, organizational

Table 4 - The effect of Ability-oriented HR practices on Performance Outcomes through Organisational Citizenship Behaviour as mediator variable

	B	Std.Error	t	p	95% CI
Model 1 (AB → PO)					
Constant	2.436	0.124	19.626	0.000	(2.192,2.680)
AB	0.444	0.035	12.542	0.000	(0.374,0.513)

Model 1 summary: R² = 0.331; MSE = 0.405; F (1,318) = 157.289; p = 0.000

Model 2 (AB → OCB)					
Constant	4.161	0.109	38.168	0.000	(3.947,4.376)
AB	0.056	0.031	1.790	0.074	(-0.006,0.117)

Model 2 summary: R² = 0.010; MSE = 0.313; F (1,318) = 3.205; p = 0.074

Model 3 (AB+OCB → PO)					
Constant	0.534	0.269	1.984	0.048	(0.005,1.063)
AB	0.418	.033	12.824	0.000	(0.354,0.482)
OCB	0.457	0.059	7.806	0.000	(0.342,0.572)

Model 3 summary: R² = 0.439; MSE = 0.341; F (2,317) = 123.939; p = 0.000

CI: Confidence interval

citizenship behaviour, was not significant ($B = 0.056, t = 1.790, p = 0.074 > 0.05$). The mediating effect is significant only if the independent variable significantly affects the mediator. Thus, our result in Model 2 does not prove the existence of the mediating effect. Moreover, according to the results in Model 3, both ability-oriented HR practices ($B=0.418, t=12.824, p=0.000<0.05$) and organisational citizenship behaviour ($B=0.457, t=7.806, p=0.000<0.05$) are significant, positive predictors of performance outcomes. The Sobel test also supports that the relationship between ability-oriented HR practices and performance outcomes was not mediated by organisational citizenship behaviour ($z=1.743, p=0.081>0.05$). Also, the results of the indirect effect based on 5000 bootstrap samples prove that there is no significant indirect relationship between ability-oriented HR practices and performance outcomes mediated by organisational citizenship behaviour (effect= 0.026, Bootstrap 95%CI = -0.025 and 0.051) as seen in Table 7. Based on this result, the hypothesis H2a is not supported by the data.

Table 5 below shows the mediation analysis results for the effect of motivation-oriented HR practices on performance outcomes, through organisational citizenship behaviour as a mediator variable. In the mediation Model 1, the regression of motivation-oriented HR practices on performance outcomes, disregarding the mediator (organisational citizenship behaviour), was significant ($B = 0.321, t=9.729, p=0.000<0.05$). Then the analysis results in Model 2 showed that the regression of motivation-oriented HR practices on the mediator,

Table 5 - The effect of Motivation-oriented HR practices on Performance Outcomes through Organisational Citizenship Behaviour as mediator variable

	B	Std.Error	t	p	95% CI
Model 1 (MO→ PO)					
Constant	2.963	0.106	27.896	0.000	(2.754,3.172)
AB	0.321	0.033	9.729	0.000	(0.256,0.386)

Model 1 summary: $R^2 = 0.229; MSE = 0.467; F (1,318) = 94.648; p = 0.000$

Model 2 (MO→ OCB)					
Constant	4.296	0.087	49.202	0.000	(4.124,4.468)
AB	0.017	0.027	0.640	0.523	(-0.036,0.071)

Model 2 summary: $R^2 = 0.001; MSE = 0.315; F (1,318) = 0.410; p = 0.523$

Model 3 (MO+OCB → PO)					
Constant	0.776	0.284	2.737	0.007	(0.218,1.334)
MO	0.312	0.030	10.394	0.000	(0.253,0.371)
OCB	0.509	0.062	8.203	0.000	(0.387,0.631)

Model 3 summary: $R^2 = 0.364; MSE = 0.386; F (2,317) = 90.832; p = 0.000$

CI: Confidence interval

organisational citizenship behaviour, was not significant ($B = 0.017, t = 0.640, p = 0.523 > 0.05$). The mediating effect is significant only if the independent variable significantly affects the mediator. Thus, our result in Model 2 does not prove the existence of the mediating effect. Moreover, according to the results in Model 3, both motivation-oriented HR practices ($B=0.312, t=10.394, p=0.000<0.05$) and organisational citizenship behaviour ($B=0.509, t=8.203, p=0.000<0.05$) are significant, positive predictors of performance outcomes. The Sobel test also indicates that the relationship between the motivation-oriented HR practices and the performance outcomes was not mediated by organisational citizenship behaviour ($z=0.636, p=0.525>0.05$). Also, the results of the indirect effect based on 5000 bootstrap samples prove that there is no significant indirect relationship between motivation-oriented HR practices and performance outcomes mediated by organisational citizenship behaviour (effect= 0.009, Bootstrap 95%CI = -0.017 and 0.033) as seen in Table 7. Based on this result, the hypothesis, H2b is not supported by the data.

Table 6 below shows mediation analysis results for the effect of opportunity-oriented HR practices on performance outcomes through organisational citizenship behaviour as a mediation variable. In the mediation Model 1, the regression of opportunity-oriented HR practices on performance outcomes, disregarding the mediator (organisational citizenship behaviour), was significant ($B = 0.354, t=10.255, p=0.000<0.05$). Then the analysis results in Model 2 showed that the regression of opportunity-oriented HR practices on the mediator,

Table 6 - The effect of Opportunity-oriented HR practices on Performance Outcomes through Organisational Citizenship Behaviour as mediator variable

	B	Std.Error	t	p	95% CI
Model 1 (OP → PO)					
Constant	2.746	0.121	22.641	0.000	(2.507,2.984)
OP	0.354	0.035	10.255	0.000	(0.286,0.422)

Model 1 summary: $R^2 = 0.249$; $MSE = 0.313$; $F(1,318) = 105.171$; $p = 0.000$

Model 2 (OP → OCB)					
Constant	4.204	0.101	41.766	0.000	(4.006,4.402)
OP	0.043	0.029	1.511	0.132	(-0.013,0.100)

Model 2 summary: $R^2 = 0.007$; $MSE = 0.313$; $F(1,318) = 2.284$; $p = 0.132$

Model 3 (OP+OCB → PO)					
Constant	0.739	0.284	2.603	0.009	(0.180,1.298)
OP	0.333	0.032	10.463	0.000	(0.271,0.396)
OCB	0.477	0.062	7.681	0.000	(0.355,0.599)

Model 3 summary: $R^2 = 0.367$; $MSE = 0.385$; $F(2,317) = 91.679$; $p = 0.000$

CI: Confidence interval

organisational citizenship behaviour, was not significant ($B = 0.043$, $t = 1.511$, $p = 0.132 > 0.05$). The mediating effect is significant only if the independent variable significantly affects the mediator. Thus, our result in Model 2 does not prove the existence of the mediating effect. Moreover, according to results in Model 3, both opportunity-HR practices ($B=0.333$, $t=10.463$, $p=0.000 < 0.05$) and organisational citizenship behaviour ($B=0.477$, $t=7.681$, $p=0.000 < 0.05$) are significant, positive predictors of performance outcomes. The Sobel test also indicates that relationship between the opportunity-oriented HR practices and the performance outcomes was not mediated by organisational citizenship behaviour ($z=1.485$, $p=0.137 > 0.05$). Also, the results of the indirect effect based on 5000 bootstrap samples prove that there is no significant indirect relationship between opportunity-oriented HR practices and performance outcomes mediated by organisational citizenship behaviour (effect= 0.021, Bootstrap 95%CI = -0.003 and 0.044) as seen in Table 7 below. In line with these results, the hypothesis, H2c is not supported by the data.

Table 7 - Total, direct, and indirect effects

		Effect	SE	t	p	LLCI	ULCI
Ability-oriented HR practices	Total effect	0.444**	0.035	12.542	0.000	0.374	0.513
	Direct Effect	0.418**	0.033	12.824	0.000	0.354	0.482
	Indirect effect ¹	0.026	0.013	-	-	-0.025	0.051
Motivation-oriented HR practices	Total effect	0.321**	0.033	9.729	0.000	0.256	0.386
	Direct Effect	0.312**	0.030	10.394	0.000	0.253	0.371
	Indirect effect ¹	0.009	0.013	-	-	-0.017	0.033
Opportunity-oriented HR practices	Total effect	0.354**	0.035	10.255	0.000	0.286	0.422
	Direct Effect	0.333**	0.032	10.463	0.000	0.271	0.396
	Indirect effect ¹	0.021	0.012	-	-	-0.003	0.044

**p < 0.01, ¹Based on 5000 bootstrap samples

5. DISCUSSION

The purpose of this research was to examine whether a positive correlation was detectable between AMO-oriented HR practices and performance outcomes and to investigate the possible mediation of OCB within such relationships which was investigated through site civil engineers working in project-based temporary organisations of the Turkish construction

industry. In this context, the AMO-orientation was found to be useful in determining the various effects of grouped HR practices on performance outcomes. The inclusion of OCB as a mediator in researching the relationship between HR practices and performance outcomes was found to be positive in various industries. However, the construction industry did not show similar results. The findings of the collected data indicate that OCB does not mediate the relationship between AMO-oriented HR practices and performance outcomes in the temporary natured construction projects. This indicates that the project-based nature of the construction industry and the job specification of site civil engineers are not suitable to generate a certain level of OCB to mediate the AMO-performance outcomes relationship. These results are likely to serve as a map in considering which set of HR practices to select for specific desired outcomes and the further development of site civil engineers working in temporary construction projects.

As it was hypothesised in H1a, the findings indicate that there was a positive relationship between ability-oriented HR practices and performance outcomes. This is also consistent with the current literature and research conducted in different industries [39], [45], [47]. This implies that site engineers with the right technical skills and education and who are trained well for certain strict regulations perform more effectively and efficiently on an individual level reflecting on the overall performance. Site engineers exposed to ability-oriented HR practices such as recruitment and selection and training and development develop and get encouraged to demonstrate dedication to the project while feeling valued by the project manager [47], [50]. In this way, the project manager will be the person to disperse his/her situation-based managerial abilities to the civil engineers by continuously transferring his managerial effectiveness and motivation.

The findings supported the second hypothesis, H1b, which revealed a positive relationship between motivation-oriented HR practices and performance outcomes. Current literature also states similar positive results [45], [46], [50]. Exposing site engineers to motivation-oriented HR practices such as performance appraisal and rewards clarifies their understanding of what the project manager expects regarding their task and how their contributions will be rewarded or punished in return. Employees by being informed about the performance appraisal and rewards structure will behave in line with their assigned goals and at the same time adhere to the cost-minimisation aim of their project by performing in their optimum time. As a result, value and quality features will be more evident in employee performance and the project outcomes. Investing in these practices is likely to result in increased engineer productivity and prevent them from quitting during the project as the construction site teams are frequently subject to change due to their temporariness.

The third hypothesis H1c was also supported by the findings which indicate a positive relationship between opportunity-oriented HR practices and performance outcomes. This positive relationship is consistent with the current literature [45], [59]. Although the job description of site engineers is very technical and time bound, expanding their autonomy in possible areas such as daily schedules is likely to increase their performance. Engineers desire autonomy specifically in terms of managing their own work [104]. Involving engineers in decisions regarding their work and its conditions fosters a participative environment where knowledge-sharing and communication are strengthened. Autonomy and participation create a feeling of cooperative integration and feeling of being valued resulting in better performance and positive attitudes [47], [62]. The results from H1a, H1b and H1c point out

that project-based temporary organisations are dependent on investing in ability, motivation, and opportunity-based activities such as HR practices or other related facilities specifically designed for engineers.

Among the hypotheses H2a, H2b and H2c which investigated the mediating effect of OCB between ability, motivation, opportunity-oriented HR practices and performance outcomes, none were significant. Concerning the findings, this shows that OCB does not mediate the relationship between AMO-oriented HR practices and performance outcomes in the project-based temporary organisations of the construction industry. The results of H2a, H2b and H2c are not consistent with the current literature [76], [85], [86] which may be due to the complex and temporary nature of the construction industry and the job description of site civil engineers. Site civil engineers work on temporary projects of certain construction firms that approximately last between 3-6 years. As a result, they may not feel any relevance to get attached or develop OCB towards the organisation that owns the project as that relationship is limited in time. The construction industry constantly focuses on performing projects at an optimum-cost, time and efficiency and is generally based on less teamwork but more instant decision-making processes such as saving the day by managing the employee turnover rapidly. Hence, our study findings fill a relevant gap in the literature by pointing out that there is a need to focus on increasing teamwork in temporary projects.

The results of this research indicate that ability, motivation, and opportunity-oriented HR practices can potentially increase the performance outcomes of engineers in construction site projects. As mentioned, the site engineers do not generate OCB towards the organisation that owns the projects as they do not have contact or relationship with the organisation they work for. Therefore, site engineers have their loyalty toward the project manager and thus OCB is likely to be generated only towards the project manager. Our study suggests that, construction companies focus on attracting a competent project manager as well as competent teams of engineers to minimise problems that are common in the complex nature of projects. Furthermore, as the total picture of the construction industry is unpredictable in terms of keeping the employee on the project, generally HR departments take action on the instant needs of the projects that are situation-based. AMO-oriented HR practices can be suitable to be adapted on the general management processes of civil engineers working on on-site projects. These practices should be implemented carefully on construction sites since their instant nature is always subject to change and it is likely that their absence can cause greater negative effects. HR activities must be properly planned and managed in construction sites for the maximum performance where HR and project managers work closely and collaborate to achieve the best performance and belongingness from engineers.

6. THEORETICAL & PRACTICAL IMPLICATIONS

The theoretical implications of this study outline that ability-oriented HR practices to have the highest impact on performance outcomes. This indicates that site civil engineers are likely to perform better if their education and technical skills are satisfactory, and if they receive ongoing trainings on job-related matters. Opportunity-oriented HR practices are second in their effect on performance outcomes. This outcome implies that engineers need a certain degree of autonomy and a participative environment that welcomes them to be involved in decisions that may influence their work conditions. In third place, motivation-oriented HR practices have the lowest effect on performance outcomes. This may indicate that

motivational matters such as rewards and performance appraisals are essential for engineers, but that they are not delivered on a satisfactory level by their organisation. OCB not mediating the relationships among ability, motivation, opportunity-oriented HR practices and performance outcomes in the project-based temporary organisations of the Turkish construction industry, is an interesting implication which may be due to the complex and temporary nature of the construction industry and the job specifications of site civil engineers.

Regarding the practical implications, the managerial bodies of the construction organisations are firstly advised to carefully select the HR practices that will function best on the construction site level. In this respect, AMO-oriented HR practices are found to be effective and suitable to be adopted, and should be integrated in constant cooperation with their project manager. Considering the ability-oriented HR practices having the highest impact on performance outcomes, it is suggested that the construction organisations strong emphasise them to achieve higher performance through their site civil engineers. Construction organisations that adopt ability-oriented HR practices are thus likely to alter their project and organisational performance. Although the opportunity-oriented HR practices were not as effective on performance outcomes as ability-oriented HR practices, they are still high in their effect. Construction organisations should plan their HR-related functions in a direction where they adopt and facilitate opportunity-oriented HR practices in a dynamic manner. In this way, their level of effectiveness on performance outcomes may increase to the level of ability-oriented HR practices' effectiveness level. In comparison to ability and opportunity-oriented HR practices, the motivation-oriented HR practices have the lowest effect on performance outcomes. Although it is the lowest, its effect is still considerably sufficient. Motivational matters are vital for site civil engineers as they have both technical and managerial responsibilities and are expected to meet strict expectations of the projects. Construction organisations should adopt motivation-oriented HR practices and transparently communicate the performance appraisal and rewards structure. As site teams are frequently subject to change due to their temporariness, motivational parameters can be seen as critical aspects for sustaining continuity on projects. Construction organisations should pay close attention to motivation-oriented HR practices and should aim to integrate attractive reward and appraisal systems and to exercise them in a way that increases them to the ability-oriented HR practices level. In order for the construction organisations to achieve maximum performance from site civil engineers, they should also focus on OCB. Engineers who are willing to go the extra mile and exercise discretionary behaviour will also become high performers as a result of being valued by their organisation. As site civil engineers are generally working with the project owner organisation for a limited time, OCB is mainly being generated towards the project managers rather than the organisation itself. Implementing and effectively exercising AMO-oriented HR practices are likely to facilitate higher levels of OCB.

In light of the above, construction organisations are advised to change their view on seeing their employees solely as a cost, but to acknowledge them as resources who are game changers. Although organisations' time with their engineers is generally limited, site civil engineers have crucial responsibilities for projects and are thus worth being invested in. This will not only maximise site civil engineer performances but will also create a quality-based construction project culture that is based on the right skills, learning, participation, autonomy and suitable reward and appraisal schemes. Giving site civil engineers professional value will also reflect on the reputation of the organisations which will result in attracting and working

with the most competent civil engineers on their sites. If the majority of the construction organisations adopt these views and follow suitable up-to-date managerial innovations, it is believed that the outcomes will eventually result in higher quality projects for the Turkish construction industry in general.

7. CONCLUSION & LIMITATIONS

Construction sites hold temporary organisational features where engineers of the project disperse once the project is finalised, and they move on to their next project in their new organisation. This study contributes to the HRM and project management literature by providing insight into the relationships between AMO-oriented HR practices, OCB and performance outcomes of project-based temporary organisations through site civil engineers operating in the construction industry in Turkey. The findings indicate that the nature of the construction industry and construction projects are likely to require relevant HR practices based on the ability, motivation, and opportunity features for an enhanced performance. For achieving a successful project, HR practices must be an integral part of all construction activities. The implementation of these practices should be executed in collaboration with the project manager. The AMO-oriented HR practices are likely to strengthen the employee-employer relations and more precisely, they can assist the project manager to manage the performances of engineers, reduce the possible conflicts between management and engineers and can alter the belongingness towards the site. As a result, effective communication is likely to be generated by investing in the engineer trainings and thus a learning organization culture that is in line with organisational goals and strategies will be adopted. In short, engineers that are exposed to recruitment and selection, training and development, performance appraisal, rewards, autonomy, and participation practices can permanently modify their attitudes and behaviours incrementally through increased motivation. This positive transformation may possibly lead to a structural change that may reflect on their quality of work which they will exercise in every current and future project they work in.

This study has several limitations. Firstly, the sample does not represent all civil engineers working on sites in Turkey but was concentrated on civil engineers working in the Marmara region which limits the generalisability of the findings when conducted to a larger population. For the study's generalisability it also needs to be conducted in different countries and economies considering cultural implications. Secondly, the current study focused on site civil engineer rated answers, but further research may choose to get project managers' input for a different perspective on the issues investigated in this study. Thirdly, the data used in this study was cross-sectional which is likely to limit the causality tests and therefore a longitudinal data is believed to generate better results. Fourthly, the effect of different mediating or moderating variables such as employee perceptions, organisational commitment and leadership styles are potential topics that can be integrated for further research. Lastly, research on site civil engineers can be distinguished according to which type of construction area they operate in, such as roads, buildings, airports, tunnels, bridges, and water supply.

Acknowledgments

Authors of this study would like to thank the site civil engineers who participated to the survey.

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Appendices:

Appendix 1

Ability, motivation, opportunity (AMO) scale
<i>a. Ability-oriented HR practices</i>
Recruitment and selection
1. My organization conducts a careful selection and recruitment procedure before employing the employees.
2. During the selection procedure, my organization verifies carefully whether the skills of employees are in line with the function.
3. During the selection procedure, my organization verifies carefully whether the employee fits within the unit.
4. During the selection procedure, my organization verifies carefully whether training is in line with the functional requirements of the unit.
Training and development
5. My organization gives the opportunity to employees to take part in training, courses, and workshops.
6. My organization gives employees the opportunity to climb in position.
7. My organization increases the responsibilities of the employees depending on their performance.
8. My organization respects career appointments.
9. My organization enables employees to work in different units.
10. My organization tailors development opportunities of employees depending on the needs of the organization.
11. My organization encourages the skills development of employees.
12. My organization supports future development plans of employees.
13. My organization offers introduction programs to execute different job requirements (styles) of employees.
14. My organization designs specific training programs with respect to different jobs.
<i>b. Motivation-oriented HR practices</i>
Performance appraisal
15. My organization reviews periodically the performance of employees.
16. My organization considers the assessment of the employees as a basis for their further development.
17. My organization keeps employees informed about the performance criteria of the unit they work in.
18. My organization sends the assessment results on paper.
19. My organization addresses their functioning and the functioning of the employees in a formal meeting.
20. My organization uses clear procedures for the assessment of the employees.
21. My organization makes it clear to the employees how their work contributes to the unit achievement goals.

Rewards
22. My organization rewards employees due to their performance.
23. My organization gives pay schemes similar with other organizations.
24. My organization gives sufficient opportunities for financial growth of employees.
25. My organization offers employees attractive fringe benefits (e.g., working hours, holidays, pension scheme, childcare, parental leave, compensation for travel costs).
26. My organization allows employees to engage in the composition of their employment package.
27. My organization gives employees the opportunity to achieve a balance between their work and private life.
c. Opportunity-oriented HR practices
Autonomy
28. My organization allows the employees to decide about the execution of their duties.
29. My organization allows the employees to set their own work pace.
30. My organization allows the employees to influence on the fulfilment of their job.
31. My organization allows the employees to have the opportunity to further develop ideas about their jobs.
32. My organization allows the employees to decide on the order of their work routine.
33. My organization allows the employees to have flexible working hours.
Participation
34. My organization allows the employees to have the opportunity to get involved in the decision-making process.
35. My organization allows the employees to give their opinion in work related issues.
36. In meetings, my organization allows the employees to get involved in the decisions that are made.
37. My organization makes sure that employees are well informed about their views and policies of the organization.
38. My organization allows me to participate through the works council.
39. During work meetings, my organization makes sure agreements are made clear.
Organizational Citizenship Behaviour Scale
40. My attendance at work is above the norm.
41. I do not take extra breaks.
42. I obey company rules and regulations even when no one is watching.
43. I am one of the most conscientious employees.
44. I believe in giving an honest day's work for an honest day's pay.
45. I do not consume a lot of time complaining about trivial matters.
46. I do not always focus on what's wrong, rather than the positive side.
47. I tend not to make a "mountain out of molehill".
48. I do not always find fault with what the organization is doing.
49. I am not the classic "squeaky wheel" that always needs greasing.
50. I attend meetings that are not mandatory but are considered important.
51. I attend functions that are not required but help the company image.

52. I keep abreast of changes in the organization.
53. I read and keep up with organization announcements, memos, etc.
54. I take steps to try to prevent problems with other workers.
55. I am mindful of how my behaviour affects other people's jobs.
56. I do not abuse the rights of others.
57. I try to avoid creating problems for co-workers.
58. I consider the impact of my actions on co-workers.
59. I help others who have been absent.
60. I help others who have heavy workloads.
61. I help orient new people even though it is not required.
62. I willingly help others who have work related problems.
63. I am always ready to lend a helping hand to those around me.
Performance Outcomes Scale
Effectiveness
64. My work unit achieves the goals that are set.
65. My work unit performs high quality work.
66. My work unit successfully contributes to the achievement of organizational goals.
67. In my work unit, activities/projects are successfully completed.
68. My work unit performs large amounts of work.
69. The work performed by my work unit provides the public worthwhile return on their tax.
70. My work unit rarely gets complaints from stakeholders about our work activities.
71. Overall, my work unit performs well.
Efficiency
72. My work unit makes sure that an effort is performed with minimal time and money.
73. In my work unit no time is wasted.
74. My work unit makes good use of employees' knowledge and skills.
75. My work unit learns from mistakes.
76. In my work unit, no money is wasted.
77. In my work unit, people and resources are properly deployed.
78. My work unit adequately conducts relations with external parties.
Fairness
79. My work unit treats stakeholders in a fair and equitable manner.
80. No laws or rules are violated when delivering the project/service to customers, businesses, and other stakeholders.
81. The work of my unit is important for the organization.
82. The work of my work unit makes an important contribution to the quality of the organization as a whole.
83. The customer satisfaction toward my work unit is very high.
84. In general, my work unit has a good image in the organization.