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The Effect of Human Investment through Spatial Contracting System on Organizational Justice and Job Engagement of General Education Teachers: A Quasi-Experimental Study in the Saudi Context

Prepared by

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Abstract

The study aimed to investigate the impact of human investment through the spatial contract system on organizational justice and job engagement among general education teachers in Saudi Arabia. The study employed a quasi-experimental methodology based on a two-equivalent-group design: experimental and control, including pre- and post-measurements. The study tools consisted of an organizational justice questionnaire and a job engagement observation card. The study was conducted during the academic year 2023 on a sample of 37 teachers (male and female), who were selected and distributed through systematic randomized sampling, followed by equivalency procedures for both groups. The researcher communicated with school leaders and teachers participating in the study and provided them with instructions and methods for implementing the study tools. Among its most important findings: There were differences in the post-test means of the organizational justice questionnaire and job engagement observation card between the experimental and control groups in favor of the experimental group, attributed to human investment through the spatial contract system. There were no differences between the experimental and control groups in the post-test means of the organizational justice questionnaire and job engagement observation card attributed to gender. Additionally, there were no differences between the experimental and control groups in the post-test means of the organizational justice questionnaire and job engagement level attributed to the interaction between the human investment system and gender. The study established multiple procedural recommendations based on its findings. Based on the findings of the study, it is recommended to enhance human capital investment through the spatial contracting system in educational institutions, due to its role in improving organizational justice and job engagement among teachers. It is also advised to adopt training programs for educational leaders to ensure effective implementation and equal opportunity. Future studies are encouraged to explore the impact of this system on other educational variables across various disciplines and educational levels.

Keywords: Human Capital Investment through the Spatial Contracting System, Job Engagement, Organizational Justice, General Education Teachers, The Saudi Context.

أثر الاستثمار البشري بنظام التعاقد المكاني في العدالة التنظيمية والاندماج الوظيفي لمعلمي التعليم العام: دراسة شبه تجريبية في السياق السعودي

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الملخص:

هدفت الدراسة إلى معرفة أثر الاستثمار البشري بنظام التعاقد المكاني في العدالة التنظيمية والاندماج الوظيفي لمعلمي التعليم العام بالمملكة العربية السعودية، وقد تم الاعتماد على المنهج شبه التجريبي القائم على تصميم مجموعتين متكافئتين: تجريبية وضابطة، ويتضمن قياساً قبلياً وبعدياً، وتمثلت أدوات الدراسة في استبانة للعدالة التنظيمية، وبطاقة ملاحظة للاندماج الوظيفي، وطبقت الدراسة خلال العام الدراسي 2023، على عينة مكونة من (37) معلماً ومعلمة، تم تحديدهم وتوزيعهم بالطريقة العشوائية المنتظمة، ومن ثم إجراءات التكافؤ للمجموعتين، وقد تم التواصل من قبل الباحث بقيادات ومعلمي المدارس المطبق فيها الدراسة، وتزويدهم بتعليمات وطريقة تطبيق أداتي الدراسة، وكان من أهم نتائجها: أنه توجد فروق في متوسطات التطبيق البعدي لاستبانة العدالة التنظيمية وبطاقة ملاحظة الاندماج الوظيفي بين المجموعة الضابطة والمجموعة التجريبية لصالح المجموعة التجريبية تعزى للاستثمار البشري بنظام التعاقد المكاني. كما أنه لا توجد فروق بين متوسطات المجموعة الضابطة والمجموعة التجريبية في متوسطات التطبيق البعدي لاستبانة العدالة التنظيمية وبطاقة ملاحظة الاندماج الوظيفي تعزى للجنس. وكذلك لا توجد فروق بين متوسطات المجموعة التجريبية والمجموعة الضابطة في متوسطات التطبيق البعدي لاستبانة العدالة التنظيمية ومستوى الاندماج الوظيفي تعزى للتفاعل بين نظام الاستثمار البشري والجنس. وعلى ضوء هذه النتائج أوصت الدراسة بعدد من التوصيات الإجرائية.

الكلمات المفتاحية: الاستثمار البشري بنظام التعاقد المكاني، الاندماج الوظيفي، العدالة

التنظيمية، معلمو التعليم العام، السياق السعودي.

1. Introduction

The educational sector in Saudi Arabia experienced important changes in recent years, creating new opportunities for institutions as well as challenges for workers in both settings. The Saudi Ministry of Education encounters ongoing difficulties in managing teacher external transfers affecting both educational stability and teacher distribution throughout Saudi regions. ([Saudi Ministry of Education, 2020](#)). The intended purpose of transfer policies is to improve teaching conditions and handles personal teacher situations yet creates major barriers to maintain stable educational staff and achieve balanced distribution of qualified personnel across different regions.

Actual needs impose constraints which force the Ministry to reject many external transfer requests which causes educators to become dissatisfied because they cannot move to their desired locations ([National Center for Research and Studies, 2021](#)). The continuous movement of educational staff contributes to negative impacts on delivery of educational quality and communication effectiveness throughout the educational system. The Saudi Ministry of Education has responded to these management challenges by introducing major human resource changes including the spatial contract system.

The spatial contract system serves as an educational workforce investment strategy which maintains employee geographical placement at specific locations for predetermined or unspecified time periods ([Ministry of Education, 2024](#)). The spatial contract system differs from traditional contracts because it defines workplace parameters to distribute qualified teaching staff where educational institutions require them most. The system's implementation targets improved responses to work needs through stable schedules and continuous work operations while solving enduring difficulties with external employee transfer requests ([Theys et al., 2019](#)).

Spatial contract implementation creates essential concerns regarding their effects on teachers' school performance and psychological welfare. Research findings demonstrate that different types of contracts generate different employee organizational effects. [De Cuyper et al. \(2011\)](#) proved that workers with long-term permanent employment positions tend to be more engaged because they experience stability and security at work. [Bal and De Lange \(2015\)](#) studied how non-permanent work arrangements compromise employee engagement particularly when workers believe their employment agreements do not align with principles of fairness.

The way teachers understand fair treatment in their educational institutions defines organizational justice within this context. The definition provided by [Al-Asmari \(2012\)](#) describes organizational justice as the fair method through which organizations should treat their employees by using objective standards to prevent biases and distribute rights and responsibilities equally. The implementation of organizational justice within educational settings shows varying levels according to research findings that show Palestinian public universities have high levels as reported by [Al-Jabari \(2024\)](#) but [Al-Zahri \(2024\)](#) observed moderate implementation in alternative educational contexts.

Job engagement stands as a vital educational effectiveness factor which describes teachers' positive attitudes toward their work and their workplace values and organizational culture ([Morsi, 2017](#)). [Sudibjo and Riantini \(2023\)](#) examined how work resources with personal motivations and nature of work and institutional vision and mission alignment influence teachers' job engagement. A research paper by [Sopdom and Mvessomba \(2023\)](#) confirmed a connection between organizational justice and workplace engagement when they proved distributive justice has a substantial impact on work engagement.

The spatial work location mismatch creates unique challenges according to research by [Jin et al. \(2022\)](#) because this mismatch affects both low-skilled and high-skilled workers thus creating job instability. Spatial contracts currently require teachers to work outside their preferred geographical areas which raises important implications about this research finding. According to [Theys et al. \(2019\)](#) spatial mismatch in the workforce has been growing during the last few decades affecting jobs that require traditional skills.

According to [Kivi and Paas \(2021\)](#) a clear gap exists in understanding both the characteristics of spatial work interaction patterns and their distribution intensity levels within regional labor markets. The Saudi educational system faces a pressing need because the spatial contract system stands as a new way to handle teacher distribution issues. The system targets educational regions with two objectives: regional organizational stability and education-specific local requirements. Nonetheless, the system's influence on teacher job engagement and organizational justice needs deeper research.

The present research investigates how human investment via spatial contracts affects organizational justice and job engagement among Saudi Arabian general education teachers. The research employs experimental groups and controls to use quasi-experimental methods for empirical

evaluation of spatial contracts' ability to boost both organizational justice and job engagement. The study enhances existing literature about educational human resource management through practical findings that help Saudi Arabian educational policymakers and administrators in addition to similar contexts.

The study holds strong relevance at present because [Al-Turki \(2023\)](#) discovered that public education schools displayed moderate organizational justice while job engagement exhibited positive correlations with organizational justice. [Mohammed et al. \(2023\)](#) stress that organizations must establish fair motivation systems based on performance rates together with achievements because comprehensive studies are needed to understand new employment systems' impact on these organizational aspects.

Based on the above, the study problem is represented in the following two questions:

1. What is the impact of human investment through the spatial contract system on the level of organizational justice in general education schools in Saudi Arabia?
2. What is the impact of human investment through the spatial contract system on the level of job engagement in general education schools in Saudi Arabia?

3. Literature Review

The research investigates organizational justice and job engagement from previous studies that address spatial employment contracts specifically in educational institutions. A comprehensive synthesis of contemporary research findings examines these related concepts for educational settings.

Organizational Justice in Educational Settings

Current studies show that educational institutions' implementation of organizational justice practices varies from high to low. [Al-Jabari \(2024\)](#) examined Palestinian public universities through extensive research and observed that institutional justice implementation was strong but the personal justice exceeded informational justice and the procedural and distributive aspects registered moderate results. The research conducted by [Al-Zahri \(2024\)](#) demonstrated organizational justice at a moderate level which implies environmental factors influence how people perceive fairness at work.

Several researchers have investigated the various aspects that make up organizational justice in education. [Al-Barami and Jaraida \(2023\)](#) suggested an organizational justice implementation model for higher

education institutions based on four essential areas including distribution and treatment together with procedural justice and evaluation practices. Their research demonstrates that educational institutions must use a comprehensive method to execute organizational justice systems. [Mohammed et al. \(2023\)](#) emphasized how schools must create specific guidelines for distributing teaching work evenly while ensuring fully equitable professional development opportunities for their entire teaching staff.

[Shawaqfeh and Al-Khatib \(2022\)](#) discovered strong organizational justice practices operating in Palestinian public secondary school principalships. According to [Abdul-Aal \(2023\)](#) the organizational justice levels in Palestinian public schools across Jerusalem were assessed as being only moderate while this could represent differences in justice implementation across regions. The study's evidence indicates that structural elements in both local areas and administrative organizations shape how organizations pursue justice practices.

Job Engagement in Educational Contexts

Multiple aspects within educational settings impact teacher engagement levels based on research studies regarding job engagement in educational environments. [Sudibjo and Riantini \(2023\)](#) investigated the impact of various influential factors on job engagement consisting of work resources combined with personal motivations and alignment with institutional vision and mission as well as care and fairness and relationships and trust and career development opportunities. The research shows that job engagement emerges from multiple organizational elements as well as individual factors.

Different educational settings exhibit varying levels of job engagement among their staff according to current research. Researchers [Ibrahim and Nawwar \(2023\)](#) reported that basic education schoolteachers demonstrated strong engagement because they showed strong professional commitment and sense of duty and responsibility. Low wages with insufficient incentives along with inadequate rewards act as barriers to job engagement according to the researchers. [Kavgacı and Öztürk \(2023\)](#) discovered Turkish primary and secondary schools showed high job engagement levels as teachers combined job resources with their personal motivation.

Many studies prove that job engagement creates positive effects on performance outcomes. [Misu et al. \(2022\)](#) increased job engagement among teachers improved their work performance which resulted in better student-school relationships and enhanced teaching approaches.

According to [Lavy \(2022\)](#) teachers who better grasped their work's objectives and vision would enhance their job engagement which resulted in better productivity and positive professional attitudes. Educational institutions should understand job engagement as a vital strategic priority based on this study research.

Spatial Contracts and Workplace Mismatch

The establishment of spatial contracts within educational environments created important dilemmas regarding workplace mismatches and their consequences on worker performance. According to [Jin et al. \(2022\)](#) workplace mismatch creates challenges for employees with both low and high levels of skills while increasing job instability when spatial mismatch intensifies. Spatial contract systems in educational institutions need this relevant information because of its impact on educational institutions.

[Theys et al. \(2019\)](#) identified recent periods that revealed increased spatial mismatch which primarily impacted traditional skill-type professions. According to their research the supply and demand structure inventively influences spatial mismatch yet low-skilled jobs together with workers remain specifically at risk. Educational institutions adopting spatial contract systems need to consider these research findings.

Intersection of Organizational Justice and Job Engagement

Various research papers investigate the connection between organizational justice and job engagement. The connection between organizational justice and workplace engagement received confirmation from [Sopdom and Mvessomba \(2023\)](#) who demonstrated distributive justice possesses a direct impact on work engagement. Studies by [Al-Turki \(2023\)](#) demonstrated that public education school principals exhibit a positive relationship between organizational justice and job engagement thereby strengthening both constructs.

Research has examined how job engagement functions as a mediator between organizational outcomes. [Wang & Siu \(2015\)](#) established that organizational justice controls the performance-outcome linkage initiated by job insecurity through job engagement as the intermediary variable. The research indicates that strong organizational justice mechanisms can reduce performance problems caused by job insecurity in the workplace.

Impact of Employment Systems on Teacher Outcomes

Studies have proven that educational institutions must prioritize their employment systems because they directly shape teacher work results. Evidence from [Al-Fahid \(2024\)](#) supports that human resource management performance levels generate vital job engagement outcomes

which influence emotions and cognition. Moreover, [Musyafak et al. \(2024\)](#) highlights organizational justice as a vital factor which enhances performance behavior within higher education institutions.

Research has investigated how employment situations affect teacher involvement. [Bodiwala and Chaithani \(2020\)](#) showed how private school teachers differed from their public school colleagues in their job engagement levels because employment settings create different conditions. [Hawkins et al. \(2022\)](#) discovered that teacher job engagement depends on fair performance assessment processes which demonstrate transparency and justice and objective evaluation methods.

Gaps in Current Research

The academic field of organizational justice along with job engagement research features multiple knowledge gaps. [Kivi and Paas \(2021\)](#) continue to observe that research has not addressed how different spatial work interactions influence each other. The research on educational settings reveals minimal exploration about how spatial contract systems influence both organizational justice and job engagement outcomes.

Research should explore the link between spatial contracts and teaching results specifically in environments which start implementing such systems. The research needs more studies about how organizational justice and job engagement factors affect each other according to [Abdullah \(2017\)](#) and [Badland et al. \(2017\)](#) advocate examining the geographical distribution of jobs to understand their effects on workforce outcomes. The study hypotheses are as follows:

1. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control group in the post-test of the organizational justice questionnaire attributed to the human investment system.
2. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control group in the post-test of the organizational justice questionnaire attributed to gender.
3. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control group in the post-test of the organizational justice questionnaire attributed to the interaction between the human investment system and gender.
4. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control

group in the post-test of the job engagement observation card attributed to the human investment system.

5. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control group in the post-test of the job engagement observation card attributed to gender.
6. There are no statistically significant differences at the level ($\alpha \leq 0.05$) between the means of the experimental group and the control group in the post-test of the job engagement observation card attributed to the interaction between the human investment system and gender.

The Relationship Between the Research Variables:

The Relationship Between Human Investment Through the Spatial Contracting System and Organizational Justice:

The concept of organizational justice refers to individuals' perception of fairness in procedures, distribution, and interpersonal treatment within the workplace (Al-Asmari, 2012). Studies have shown that organizational justice is influenced by different employment systems. For example, the study by Bal & De Lange (2015) found that employees with permanent contracts tend to perceive higher levels of organizational justice compared to those working under temporary contracts, due to the sense of job security. This finding is consistent with the study by Kalleberg & Marsden (2013), which confirmed that non-permanent contracts tend to diminish perceptions of organizational justice.

Regarding the current study on human investment through the spatial contracting system, the results indicated that this system achieved higher levels of organizational justice compared to the permanent employment system. The average organizational justice score for the experimental group was (159.79), compared to (105.03) for the control group, with statistically significant differences at the (0.05) level. This suggests that the spatial contracting system fosters a more equitable work environment by promoting fairer distribution of resources and benefits. These findings support the results of Sopdom & Mvessomba (2023), which demonstrated that organizational justice enhances employee engagement at work.

The Relationship Between Human Investment Through the Spatial Contracting System and Job Engagement:

Job engagement is defined as the extent to which an employee is connected to, interested in, and dedicated to their work (Morsi, 2017).

Previous studies have shown that human investment has a direct impact on job engagement. For instance, the study by Sudibjo & Riantini (2023) highlighted that factors such as the work environment and organizational justice significantly influence engagement levels.

In the current study, the findings revealed that teachers in the experimental group, which implemented the spatial contracting system, exhibited higher levels of job engagement (144.01) compared to the control group (76.94), with statistically significant differences at the (0.05) level. This confirms that the spatial contracting system enhances teachers' engagement within their work environment. Additionally, the study by Lavy (2022) indicated that teachers' awareness of their work goals contributes to greater engagement—an aspect that aligns with the nature of the spatial contracting system, which clearly defines the work location and contributes to both psychological and occupational stability for employees.

The study's framework establishes a relationship between "human investment through the spatial contracting system" as an independent variable, and "organizational justice" and "job engagement" as dependent variables, which were analyzed statistically. The results demonstrated that the spatial contracting system enhanced organizational justice, which in turn led to improved job engagement. This aligns with findings from previous studies, such as Sudibjo & Riantini (2023), which indicated that organizational justice contributes to enhancing job engagement.

4. Method

Research Design

The study employed a quasi-experimental methodology with a two-equivalent-group design incorporating both pre- and post-measurements. The design was selected to examine the impact of human investment through the spatial contract system on organizational justice and job engagement among general education teachers. The experimental group consisted of teachers employed under the spatial contract system, while the control group included teachers under permanent employment. The experimental design followed a standard pre-test/post-test control group format, where O1 represents pre-measurement, X represents the independent variable (spatial contract system), and O2 represents post-measurement. Both groups underwent pre- and post-testing, with only the experimental group receiving the treatment condition.

The quasi-experimental design was chosen instead of a purely experimental approach because, in educational contexts such as this study, it is often difficult to achieve full experimental control as in natural sciences research. It is challenging to fully control all influencing factors, as is typically possible in laboratory experiments, and it is also difficult to achieve complete randomization in assigning participants to groups. These limitations render the use of a fully experimental design impractical in this context.

The spatial contracting system was defined as an administrative framework that determines the teacher's geographical work location without the possibility of transfer. This approach contributes to the distribution of teachers based on actual needs, reduces external transfer issues, and enhances organizational justice and job stability. The system was implemented for the experimental group by employing them under this model, while the control group remained under the permanent appointment system.

Participants

The study population comprised all teachers recruited in the 2022 academic year under permanent appointment (n = 191; 87 male and 104 female teachers) and those recruited in 2023 under the spatial contract system (n = 265; 56 male and 209 female teachers) in Wadi Al-Dawasir and Al-Sulayel governorates. Using systematic randomized sampling, an initial sample of 40 teachers was selected. After accounting for attrition (three teachers excluded for frequent absences), the final sample consisted of 37 teachers. The sample was divided into experimental (n = 18; 8 male, 10 female) and control (n = 19; 10 male, 9 female) groups. To ensure group equivalence, several factors were controlled during the selection process: teaching specialization, academic GPA, prior work experience, age, and economic level. Statistical equivalence was confirmed through Two-Way ANCOVA analysis.

Instruments

The questionnaire was developed based on a review of previous literature in the fields of organizational justice and job engagement. A number of recent studies addressing these concepts in various educational and administrative contexts were examined and analyzed to ensure that the questionnaire items align with accepted scientific standards. These included studies such as Al-Zuhari (2024), Al-Jaabari (2024), Sopdom & Mvessomba (2023), and Musyafak et al. (2024).

Two primary instruments were used for data collection. The first was an organizational justice questionnaire developed based on existing

literature and validated by seven specialists in the field. The final version contained 39 items measured on a five-point Likert scale. Reliability was established through several methods. Test-retest reliability with a pilot sample of 20 teachers yielded a Pearson correlation coefficient of 0.69. Internal consistency analysis using Cronbach's alpha showed strong reliability ($\alpha = 0.91$) for the overall questionnaire, with individual item reliability coefficients ranging from 0.77 to 0.84.

The second instrument was a job engagement observation card consisting of 35 items, also measured on a five-point Likert scale. Validity was confirmed through expert review by the same panel of seven specialists. Inter-observer agreement was calculated using Cooper's equation, with agreement rates ranging from 0.72 to 0.98 ($M = 0.85$), indicating strong inter-rater reliability.

Procedures

The implementation of the study began with group formation and equivalency procedures. Participants were identified and assigned to control (permanent employment) and experimental (spatial contract) groups, with careful attention paid to controlling key variables including teaching specialization, academic GPA, prior work experience, age, and economic level. Statistical equivalence was confirmed through Two-Way ANCOVA analysis.

During the pre-implementation phase, both instruments were administered to both groups at the beginning of the academic year to establish baseline measurements for organizational justice and job engagement levels. The implementation phase then commenced, with the control group continuing under the permanent appointment system while the experimental group operated under the spatial contract system. The necessary instructions and guidance for implementing study tools were delivered to teachers while leaders received regular updates during this phase.

Both groups received post-tests at academic year's end during the post-implementation stage. The gathered data underwent analysis to assess changes in both organizational justice and job engagement levels while statistical tests confirmed any significant score differences across the participant groups.

Variables and Data Analysis

Research used human investment (spatial contract system versus permanent employment system) as the independent variable to analyze both organizational justice and job engagement as dependent variables. The analysis used teacher gender (male or female) as a moderating

variable whereas employment year (2022 or 2023) served as a controlled component. The researcher used descriptive and inferential statistical methods. Means and standard deviations were calculated for teachers' post-test scores on both instruments. This study used Two-Way ANCOVA to evaluate how the human investment system and teacher gender and their joint effect influence both organizational justice and job engagement measures. The selected analysis method enabled researchers to test all six research hypotheses alongside the adjustment for pre-existing group differences.

5. Results

The results are organized according to the study's two primary research questions examining the impact of the spatial contract system on organizational justice and job engagement among general education teachers in Saudi Arabia.

The analysis of the impact on organizational justice began with an examination of pre-test and post-test scores for both experimental and control groups. Table 1 presents these initial findings:

**Table 1:
Means and Standard Deviations for Pre-test and Post-test Organizational Justice Questionnaire**

Group	Pre-test		Post-test	
	M	SD	M	SD
Experimental	84.06	18.03	161.61	30.22
Control	81.37	14.99	104.21	19.48

While pre-test means were comparable between the experimental and control groups, significant differences emerged in post-test scores. To account for potential gender differences, adjusted post-test means were calculated for both groups, as shown in Table 2:

Table 2:
Adjusted Means and Standard Errors for post-test organizational justice questionnaire results by Gender

Group	Gender	N	Adjusted Mean	SE
Experimental	Male	8	150.81	8.68
	Female	10	168.76	7.63
	Total	18	159.79	5.71
Control	Male	10	104.32	7.64
	Female	9	105.74	8.00
	Total	19	105.03	5.52

To determine the statistical significance of these differences, a two-way ANCOVA was conducted, controlling for pre-test scores. Table 3 presents these results:

Table 3:
Two-Way ANCOVA Results for Organizational Justice Questionnaire

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Covariate	8635.28	1	8635.28	14.99	0.001
Pre-test	3236.90	1	3236.90	5.62	0.024
Group	27221.20	1	27221.20	47.25*	0.000
Gender	852.44	1	852.44	1.48	0.233
Group×Gender	594.28	1	594.28	1.03	0.317
Error	18433.68	32	576.05		
Total	52808.32	36			

Note: * Significant at ($\alpha \leq 0.05$)

The analysis revealed a significant main effect for the spatial contract system, $F(1, 32) = 47.25$, $p < .001$, with an effect size of $\eta^2 = 0.52$, indicating that approximately 52% of the variance in organizational justice scores was attributable to the implementation of the spatial contract system. The experimental group's higher adjusted mean ($M = 159.79$, $SE = 5.71$) compared to the control group ($M = 105.03$, $SE = 5.52$) provides strong evidence that the spatial contract system enhanced teachers' perceptions of organizational justice. Neither the main effect of gender ($F(1, 32) = 1.48$, $p = .233$) nor the interaction effect between the spatial contract system and gender ($F(1, 32) = 1.03$, $p = .317$) reached statistical significance, suggesting that the benefits of the spatial contract system were consistent across gender groups.

Turning to job engagement, similar analyses were conducted beginning with pre-test and post-test scores, as shown in Table 4:

Table 4:

Means and Standard Deviations for Pre and Post Job Engagement Observation Card

Group	Pre-test		Post-test	
	M	SD	M	SD
Experimental	60.67	10.59	144.67	26.79
Control	57.74	7.26	77.00	17.99

The analysis revealed substantial differences in post-test scores between groups. Adjusted post-test means by gender were calculated and are presented in Table 5:

Table 5:
Adjusted Means and Standard Errors for Post Job Engagement Observation Card by Gender

Group	Gender	N	Adjusted Mean	SE
Experimental	Male	8	138.22	8.33
	Female	10	149.79	7.38
	Total	18	144.01	5.58
Control	Male	10	78.42	7.41
	Female	9	75.46	7.79
	Total	19	76.94	5.39

A second two-way ANCOVA was conducted to test the significance of these differences, with results presented in Table 6:

Table 6:
Two-Way ANCOVA Results for Job Engagement Observation Card

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Covariate	9524.67	1	9524.67	17.52	0.000
Pre-test	0.31	1	0.31	0.00	0.981
Group	40063.75	1	40063.75	73.69*	0.000
Gender	169.68	1	169.68	0.31	0.580
Group×Gender	481.55	1	481.55	0.89	0.354
Error	17397.41	32	543.67		
Total	60354.76	36			

The analysis revealed an even stronger effect for job engagement than for organizational justice, with a significant main effect for the spatial contract system, $F(1, 32) = 73.69$, $p < .001$, and an effect size of $\eta^2 = 0.66$. This indicates that approximately 66% of the variance in job engagement scores was attributable to the implementation of the spatial contract system. As with organizational justice, neither gender ($F(1, 32) = 0.31$, $p = .580$) nor the interaction between gender and group ($F(1, 32) = 0.89$, $p = .354$) showed significant effects, suggesting that the benefits of

the spatial contract system for job engagement were consistent across gender groups.

The covariate (pre-test scores) showed significant effects in both analyses (organizational justice: $F(1, 32) = 14.99, p = .001$; job engagement: $F(1, 32) = 17.52, p < .001$), confirming the importance of controlling for initial differences between groups. The consistency of non-significant gender effects across both outcomes suggests that the spatial contract system's benefits were equally accessible to teachers (male and female). Furthermore, the absence of significant interaction effects indicates that the spatial contract system's positive impacts were robust across different subgroups of teachers, enhancing its potential value as a broad-based intervention strategy.

Research findings strongly show that the spatial contract system effectively creates better organizational justice and job engagement outcomes for Saudi general education teachers. The significant effect sizes demonstrated that practical improvements went beyond statistical relevance since the program showed consistent benefits across both genders.

6. Discussion

The study reveals that the spatial contract system has significant effects on the organizational justice perceptions and job engagement levels of Saudi general education teachers. The study results present key learning about how the spatial contract system succeeds as an HRM strategy for educational organizations.

The spatial contract system's strong effect on organizational justice ($\eta^2 = 0.52$) suggests that this approach addresses fundamental concerns about fairness in educational institutions. This substantial effect size aligns with [Al-Jabari's \(2024\)](#) findings of high organizational justice implementation in educational settings, while extending our understanding of how employment systems can enhance perceptions of fairness. The spatial contract system appears to particularly strengthen distributive justice by providing clear guidelines for teacher placement and establishing transparent criteria for work location assignments.

The system's effectiveness in enhancing organizational justice may be attributed to several factors. First, as noted by [Mohammed et al. \(2023\)](#), clear guidelines for distributing educational work equitably within schools are essential for promoting organizational justice. The spatial contract system provides such clarity by explicitly defining workplace locations and establishing transparent criteria for teacher placement. Second, the system addresses what [Al-Barami and Jaraida \(2023\)](#)

identified as key dimensions of organizational justice in education: distribution justice, treatment justice, procedural justice, and evaluation justice.

The strong effect size observed in this study exceeds the moderate levels of organizational justice reported in previous research ([Al-Zahri, 2024](#); [Abdul-Aal, 2023](#)). This suggests that the spatial contract system's comprehensive approach to addressing workplace fairness may be more effective than traditional employment arrangements. The system's success appears to stem from its ability to address what [Theys et al. \(2019\)](#) identified as increasing spatial mismatch challenges in professional settings.

The even larger effect size observed for job engagement ($\eta^2 = 0.66$) represents a significant advancement in our understanding of how employment systems can enhance teacher engagement. This finding builds upon previous research by [Sudibjo and Riantini \(2023\)](#), who identified multiple factors affecting teachers' engagement levels, including work resources and alignment with institutional vision. The spatial contract system appears to address these factors by providing clear structure and expectations regarding work location and professional responsibilities.

The magnitude of this effect is particularly noteworthy when compared to other interventions aimed at improving teacher engagement. While [Ibrahim and Nawwar \(2023\)](#) found generally high levels of job engagement among basic education teachers, our findings suggest that the spatial contract system can further enhance these levels. The system's success may be attributed to its ability to address what [Kavgacı and Öztürk \(2023\)](#) identified as crucial factors for job engagement: job resources and personal motivation.

Several aspects of spatial contracts appear to contribute to increased engagement levels. First, the system provides what [Misu et al. \(2022\)](#) identified as essential elements for teacher engagement: clear expectations and stable working conditions. Second, it addresses the workplace mismatch concerns highlighted by [Jin et al. \(2022\)](#) by establishing clear geographical boundaries for employment. Third, the system aligns with [Lavy's \(2022\)](#) findings regarding the importance of understanding work purpose and vision in enhancing job engagement.

The absence of significant gender differences in both organizational justice and job engagement outcomes represents an important finding. This consistency across gender groups contrasts with some previous research showing varying levels of engagement between teachers (male

and female) ([Topchyan et al., 2020](#)). The spatial contract system appears to provide benefits that transcend gender-based differences in workplace experiences.

Several factors may contribute to this gender consistency. First, the system's transparent criteria and clear guidelines may help minimize potential gender bias in work assignments, addressing concerns raised by [Al-Turki \(2023\)](#) regarding the need for fair and objective systems. Second, the structured nature of spatial contracts may provide what [Sopdom and Mvessomba \(2023\)](#) identified as essential elements for workplace engagement across gender groups: clear expectations and fair treatment.

The study's findings have several important implications for educational administrators and policymakers. First, the implementation of spatial contracts should be approached systematically, with careful attention to establishing clear criteria for teacher placement and ensuring transparent communication of expectations. Administrators should consider what [Al-Fahid \(2024\)](#) identified as crucial elements of human resource management: clear policies, fair implementation, and consistent communication.

When scaling the spatial contract system, several considerations emerge. First, administrators must ensure adequate support systems are in place to help teachers adapt to their assigned locations. Second, as suggested by [Musyafak et al. \(2024\)](#), attention should be paid to maintaining organizational justice throughout the scaling process. Third, mechanisms should be established to monitor and address any challenges that arise during implementation.

Potential challenges in implementation may include resistance to geographical assignments, concerns about long-term career prospects, and the need for additional support systems in remote locations. Administrators should consider developing strategies to address these challenges, perhaps drawing on what [Hawkins et al. \(2022\)](#) identified as key factors in successful educational reforms: stakeholder engagement, clear communication, and adequate support systems.

The spatial contract system shows promise in addressing several persistent challenges in Saudi education. As noted in the [Ministry of Education's \(2024\)](#) reports, teacher distribution has been a significant challenge, particularly in ensuring qualified teachers are available in all geographical areas. The spatial contract system provides a structured approach to addressing these distribution issues while maintaining educational quality and stability.

The system's potential impact on educational quality aligns with national goals for educational improvement. By ensuring more stable staffing arrangements and clearer expectations for teacher placement, the system may help address what the [National Center for Research and Studies \(2021\)](#) identified as key challenges in maintaining educational quality across different regions.

The long-term outcomes for Saudi educational institutions should lead to more stable teacher staffing levels along with fair distribution of qualified instructors and better abilities to fulfill regional educational demands. The observed results support Saudi Arabia's educational development plans which also drives changes in Saudi education.

Several limitations should be considered when interpreting these results. First, the study's quasi-experimental design, while appropriate for the research questions, may not capture all factors influencing teacher outcomes. Future research might employ mixed-methods approaches to better understand the mechanisms through which spatial contracts influence teacher experiences.

The results might differ in other educational contexts, particularly those with different geographical challenges or cultural expectations regarding work location. Future studies should examine the system's effectiveness in various educational settings and cultural contexts. Additionally, as [Kivi and Paas \(2021\)](#) suggested, more research is needed on the types and intensity of spatial work interactions in different educational contexts.

Further research should test supplementary variables which might affect the impact of spatial contracts. Teacher career stages together with subject area expertise and school-related elements should be subject to further research studies. The research methodology requires enhancement via longitudinal approaches and bigger sample sizes alongside qualitative research to acquire a deeper comprehension of teacher encounter with the system.

The impact of human investment on organizational justice and job engagement was analyzed using a quasi-experimental method. The results revealed statistically significant differences in favor of the experimental group that was subject to the spatial contracting system, indicating a positive impact of this system on organizational justice ($F = 47.25, \alpha = 0.05$) and job engagement ($F = 73.69, \alpha = 0.05$). These findings were supported by comparisons with studies such as [Sopdom & Mvessomba \(2023\)](#), which confirmed the influence of organizational justice on job engagement.

Absence of Gender Effect:

The study revealed no statistically significant differences attributable to the gender variable in either organizational justice or job engagement. The F-value for gender was 1.48 ($p = 0.233$) for organizational justice and 0.31 ($p = 0.580$) for job engagement, indicating that gender had no effect.

Absence of Interaction Between Human Investment and Gender:

There was no interactive effect between gender and human investment, as the values were not statistically significant. This reflects the neutrality of the spatial contracting system with respect to both genders.

Possible Interpretations:

- **Uniform Standards Imposed by the Contracting System:** The researcher interprets this finding in light of the nature of the spatial contracting system, which may impose standardized criteria on all employees regardless of gender, thereby minimizing differences.
- **Absence of Administrative Discrimination:** Another possible explanation is that the administrative system in the schools under study may treat both genders equally, which is reflected in the absence of significant differences.
- **Sample Homogeneity:** This result may also be attributed to the relative homogeneity of the sample in terms of professional and economic conditions, which may have reduced the impact of the gender variable.

7. Conclusion

The research establishes strong evidence showing the spatial contract system enhances both organizational justice and job engagement within Saudi Arabian general education teaching roles. The large effect sizes for organizational justice ($\eta^2 = 0.52$) and job engagement ($\eta^2 = 0.66$) together with consistent results between genders highlight the strong potential of this human resource management innovation for handling long-standing teacher distribution and workplace stability issues. The study shows how structured employment systems enhance workplace fairness and employee engagement since it delivers practical solutions to educational institutions addressing teacher distribution challenges.

The study generates crucial insights about educational policy and administration because it refers to distributions of teaching staff and workplace stability in similar contexts. Present research demonstrates spatial contracts can function as an effective method for strengthening organizational justice and job engagement within educational establishments but additional assessment is required to understand their

performance through diverse contexts and extended usage durations. The findings will help educational institutions create human resource management systems which support institutional stability and teacher well-being as their systems transform.

Considering these conclusions, the researcher recommends the following: Educational institutions should be required to establish clear standards for spatial contracting, including criteria for salaries, incentives, and duration of employment, in order to ensure organizational justice and professional stability. Design continuous training programs to support newly appointed teachers, along with offering incentive rewards for exemplary educational practices.

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