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Article

Unveiling the role of job involvement as a mediator in the linkage between academics' job satisfaction and service quality

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Unveiling the role of job involvement as a mediator in the linkage between academics' job satisfaction and service quality

Abd Al-Aziz Al-refaei^{a,b} , Hairuddin Bin Mohd Ali^c, Ali Ateeq^d, Abdulhadi Ibrahim^e, Siddig Ibrahim^f, Mohammed Alzoraiki^d, Marwan Milhem^d and Baligh Beshr^d

^aResearch Management Centre, International Islamic University Malaysia (IIUM), Jalan Gombak, Kuala Lumpur, Malaysia;

^bLincoln University College, Petaling Jaya, Selangor D. E, Malaysia; ^cInternational Islamic University Malaysia (IIUM), Jalan Gombak, Malaysia; ^dCollege of Administrative and Financial Science, Gulf University, Sanad, Bahrain; ^eCollege of Business Administration, A'Sharqiyah University, Ibra, Sultanate of Oman; ^fArab Open University, A'ali, Bahrain

ABSTRACT

The perceptions of employees about their work and organization are influenced by a variety of attitudes. As a result, the impact of employee attitudes like job involvement (JI) and job satisfaction (JS) on organizational performance (service quality) is still unknown, and it is also uncertain how job involvement will mediate this relationship. Therefore, the goal of this work is to incorporate a mediating model to enhance Service Quality (SQ) through JI and JS and explore how that model can improve and sustain SQ in institutions of higher learning in poor nations. This work utilized a conceptual integration between service providers and how well the service is received by customers. It applied dual-perspective and the cross-sectional, ex-post facto survey method by using two sets of questionnaires, and a two-sample study design was used to obtain data from the respondents. For this study, the sample size consisted of the lecturers (296 participants) and their students (1480 participants). SEM was utilized to examine the data that had been gathered. The data analysis revealed that JS had a sizable influence on JI and SQ (i.e. the caliber of the lectures they heard in class that influenced their learning capabilities). JI had a significant impact on SQ and partly mediated the impact of JS & and SQ. This research adds to knowledge by connecting the JI, JS of employees and SQ perceived by customers. In order to promote SQ, employees JI and JS are essential. This study also has practical applications for students, employees, organizations and society.

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Introduction

Quality education is a primary goal priority for public schools in developing nations. Given these elements, it has been recognized that the higher education sector remains a major driver of the plans of the government toward creating a service-based economy that is knowledge-based (Al-Refaei et al., 2023); Demirel (2022). High levels of human capital skills, rapid technical innovation and high-quality education are also mentioned by Trivellas and Dargenidou (2009) and Alshuhumi et al. (2023) as important drivers of social and economic advancement in emerging nations, and achieving sustained development (Rosi & Obrecht, 2023), especially in the Middle East and the north Africa countries, which universities were increased by 105% between 2000 and 2022 (TheWorldBank, 2023). For example, in Yemen, the number of public universities increased from 2 to 18 universities, and 56 new private universities established. This has increased the intensity of competition between universities in providing high-quality educational services, as well as reforming their study programs or adding new ones to meet the growing market needs. Along with this, the growth of the young population is estimated to be 65 million by 2030; where education and qualified professionals are crucial

CONTACT Abd Al-Aziz Al-refaei  ah_alrefaei@yahoo.com  Research Management Centre, International Islamic University Malaysia (IIUM), Jalan Gombak, Kuala Lumpur 53100, Malaysia.

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elements for achieving sustained development and sustainable development goals (SDGs) (Ateeq, Alaghbari, et al., 2024; Rosi & Obrecht, 2023; Stough et al., 2018). Therefore, the quality of higher education services can considerably enhance the nation's development (social and economic) (Butrym, 2020; Vaseer & Shahzad, 2016). Contrarily, universities that do not offer the required level of SQ will not contribute significantly to the economy and communities of developing countries (Al-Refaei et al., 2023).

Due to the large number of high-quality service activities offered by employees, as well as the significance of other human factors in service provision in universities and colleges, it has been considered that the higher education sector is labor-driven (Küskü, 2003). This business is seen as being customer-intensive because of the vast volume of students who every day seek similar services and the ever-growing need for advanced education in developing nations; as a result, students are seen as the major clients by universities and colleges (Ilie et al., 2021). Nevertheless, Parasuraman et al. (1988) emphasized the equal significance of investigating the attitudes and perspectives of employees who provide the service, in addition to those of consumers' perception of service quality. Whereas customer researches focus on what happens in a service business (front-stage perspective), employee research (back-stage perspective) explains why specific events occur. Therefore, investigation of both points of view is worth studying, due to employee's perspective (Which is expressed through their attitudes and behavior) has crucial impact on customer perspective of service quality (Al-Refaei et al., 2024). Furthermore, employee-customer social interactions positively affect service quality (Al-Refaei et al., 2024; Li et al., 2019). Therefore, employees' social satisfaction in their organization plays a critical role in employee-customer social interactions during service-providing encounters. Logically, it is impossible for an employee to interact socially positively with a customer when he is socially dissatisfied in his organization. Therefore, including the social satisfaction element of the service providers is vital in the investigation of customer perception of service quality. Therefore, our present perception of how customers judge service quality has been greatly impacted by this. However, institutions' capability to deliver good service is determined by the specific customer-employee interaction levels (Al-Refaei et al., 2023; Zeithaml et al., 1990). The demeanor exhibited by employees, and the level of their job satisfaction, job involvement, and their willingness to go above and beyond during a service contact also has a big impact on the nature of the service that is donated to consumers (Malhotra et al., 2013). When employees are disengaged, unsatisfied, uninvolved, uncommitted and disloyal to their employer, it is illogical to give the proper amount of SQ (Al-Refaei et al., 2024; Babakus et al., 2003).

Therefore, scholars should focus more on the JS-JI relationships and their influence on SQ in universities and colleges. Contrarily, researchers contend that client perceptions of the quality of offered services are directly influenced by front-line employee performance (Liao & Chuang, 2004; Liao et al., 2009). Additionally, while measuring the customer's view of service quality, individual employee performance should be taken into account rather than a global or group assessment (Gould-Williams & Davies, 2005). As a result, by looking at the relationship between SQ and the JI, JS and particular personnel who supply the service, it is possible to better understand the quality of the rendered services.

According to the literature, numerous research has looked at the JS-SQ relationship. The examination of the effects of a mixture of attitudes, including JI and JS, on SQ, however, has received less attention. The combined influence of JI & JS on SQ is thus still unknown. Additionally, academics like Mathieu and Zajac (1990) advocated looking into the mediation role of JI in linking JS and their outcomes (such as SQ). As was previously indicated, academics have not paid enough attention to job involvement, particularly as it mediates this relationship. It is yet unclear how work involvement acts as a mediator. Therefore, more research is required to ascertain the mediation role of JI in JS-SQ relationship.

Earlier works have evaluated how workers' attitudes and actions affect their performance (e.g. SQ) using a single framework (Trivellas & Dargenidou, 2009; Vaseer & Shahzad, 2016; A. Zumrah, 2015). The impact of workers' behaviors and attitudes, such as JI and JS, on the actual SQ provided by the workers has also been questioned because workers' attitudes and workplace behavior are the outcome of a combination of attitudes (Blau & Boal, 1987; Morrow, 1983; Wegge et al., 2007). Notably, past research has rarely examined the social component of contentment. Despite the social aspect's relevance for employee JS, this aspect refers to how employees view support, recognition and interpersonal ties inside their workplace, which influences their overall job satisfaction (Mowday et al., 1982; Schnake, 1983).

The current study was designed with these deficiencies in mind and incorporates a mediating variable to enhance SQ through JI, and JS, in colleges and universities in underdeveloped nations.

As a result, this study makes a number of original contributions to the body of knowledge about SQ and employee work attitudes. This study takes a 'dual-perspective approach' by integrating customer and employee research, focusing on the front-stage perspective of what occurs in a service business and the back-stage perspective of why particular events happen. By gathering information by faculty staff members as well as their students. It linked consumers' (students') perspectives on the quality of the services they received with employees' (service providers'). It reveals the complexity in the nature of service quality, the importance of interactions between providers and recipients of services, and expands our understanding of the nature of service quality.

It incorporates a new mediating variable to examine the effects of two significant employee work attitude components (JI and JS) on service quality, underlining the significance of examining the two employee work attitude components concurrently. It takes into account social job satisfaction and significantly adds to the body of knowledge on employee work attitudes and SQ. It offers guidance to universities on how to effectively manage their workforces in order to improve service quality.

Theoretical basis and formulation of hypotheses

Social exchange theory can be applied to understand the interactions between employees and organizations. This theory suggests that when individuals contribute something of value, such as their services, they anticipate a comparable return in the future. This idea, originating from Blau's work in 1964 and later supported by Gould-Williams and Davies in 2005, underpins the expectation of mutual benefit in such relationships. This idea relates to how workers perceive their involvement, satisfaction and readiness to work harder as types of social reciprocation (Al-Muhrami et al., 2021; Al-Refaei et al., 2023; Eisenberger et al., 1990). In order for the workforce to feel more content toward the organization, it attempts to establish or sustain positive social exchange links with them (Eisenberger et al., 1990; A. R. B. Zumrah et al., 2021). As a result, this idea has been used to comprehend the interaction between employees and employers in businesses.

Employee attitudes toward their company, as reflected in job satisfaction and job involvement, along with their readiness to exceed expectations, are examples of employees reciprocating to their employer. When employees feel their needs are adequately met and develop a strong emotional connection with their workplace, they tend to exhibit higher job satisfaction, job involvement and a deep-rooted loyalty to the organization. This, in turn, leads to them delivering superior services that benefit both the company and its customers, as noted by various researchers, including Eisenberger et al. (1990), Yee et al. (2015) and Al-Refaei et al. (2021).

Higher education institutions are well-known for their labor-intensive and extensively customer-centric offerings. The provision of superior services in this industry presents difficulties as a result of two prominent aspects. Firstly, customers' perceptions of an institution's service quality (reliability, assurance, responsiveness, empathy) can be influenced by employees' positive or negative feelings about their jobs and the workplace as a whole (job satisfaction and job involvement). Secondly, the willingness of employees to go beyond their regular duties (extra-role work behavior) during customer interactions plays a crucial role in achieving the organization's objectives (Schneider et al., 1980). The creation of high-service quality and the success of organizational goals heavily rely on the presence of good attitudes and the proactive behavior of front-line personnel during service encounters. Without these essential factors, organizations may confront challenges in order to provide their clients with adequate service and reach their objectives.

Job satisfaction and service quality

Job satisfaction has become crucial, especially for service-oriented firms, due to the ability of labor-intensive enterprises, like universities and colleges, to surmount obstacles and boost their capacity to offer their clients services of superior quality. This is true because only content or happy workers can deliver the high-quality services that are essential to any university. On the other hand, corporations

struggle to deliver high-quality service when employees are dissatisfied. According to earlier studies, it is impossible for employees to provide the appropriate quality of service when they are unhappy or dissatisfied with their employment (Al-Refaei et al., 2019; Zeithaml et al., 1996). Since customers' perceptions of SQ are impacted by staff's perceptions of their workplace, the current study argues that it is not possible to meet customers' demands when the people who provide those services are not happy with their workplace.

Scholars have demonstrated that staff work satisfaction substantially impacts SQ. For instance, the study by Malhotra and Mukherjee (2004) discovered that the JS of call center personnel has a considerable impact on service delivery. Through the use of social mechanisms, Gazzoli et al. (2013) show that employee satisfaction mediate the influence of empowerment on the perception of consumers as relates to SQ. According to Ukil (2016), happy workers deliver substantially better customer service. In Finanda & Lutfi (2018), it was discovered that JS has a favorable influence on SQ, customer satisfaction and profitability in the banking industry. A sample of managers and their employees from companies in China was focused on the study by Shen and Tang (2018) using the social exchange theory (SET) and it was discovered that JS has a favorable rule on SQ. and JS significantly affects SQ in health sector (Khairunnisa & Nadjib, 2019).

Academic and administrative staff JS has a substantial influence on SQ in Greece with regard to the higher education sector (Trivellas & Santouridis, 2016). A similar study highlighted the critical role that JS plays in SQ and discovered that JS significantly affects SQ in Pakistani universities (Vaseer & Shahzad, 2016). In another study by Osman et al. (2017), the mediating role of faculty staff satisfaction on SQ and service climate relationship was identified. According to a recent systematic study of service quality in universities and colleges conducted by Camilleri (2021), SQ was observed to be significantly impacted by employee behaviors and attitudes.

However, 'several earlier research did not discover a substantial influence of JS on SQ; for instance, in the health sector, Ariani (2015) did not discover any impact of JS on SQ. Yee et al. (2015) also found that customer service is unaffected by JS.' This implies that additional research is necessary to validate the link of JS to SQ. Hence, this study proposes as follows:

H1. JS has a positive and significant impact on SQ in higher education.

Job involvement as a mediating factor

Two important connected constructs, JI and JS, have been found to have a considerable effect on SQ (Camilleri, 2021; Osman et al., 2017; Shen & Tang, 2018; Ukil, 2016). However, studies have repeatedly demonstrated that these two constructs are positively connected to one another and that enhancing one can enhance the other factors (Brooke et al., 1988; Ćulibrk et al., 2018; Knoop, 1995; Mathieu & Farr, 1991). For instance, Zopiatis et al. (2014) discovered that JI is related to JS and that increase in JI also improves JS. A recent study revealed that JS has a strong effect on SQ when JI is high (Al-Refaei et al., 2023). Organizations must understand their JI levels since they are associated with other important job attitudes like JS, OC, and decreased turnover intents (Blau & Boal, 1987; V. Chang et al., 2022; Demir, 2020). Organizations may find it easier to increase employee satisfaction, commitment and performance (service quality) among those with greater levels of JI, according to L.-C. Chang et al. (2010). While enhancing JI should be a top aim of an organization, this work-related characteristic has been found to have an important influence on the effectiveness of an organization.

Although JS directly affects SQ, these effects may be stronger when workers perceive their work as valuable (Blachut, 2012). Researchers frequently suggest that investigations of JS should take into account other factors like JI (Ćulibrk et al., 2018; Demir, 2020). Future research should, according to these authors, look into the mediating role that JI plays in outcomes. For instance, Blachut (2012) discovered that when job participation was low, JS had little effect on the intention to stay, while the inverse was true. Another study discovered that JS & JI affect employees' intentions to leave the company, and when they feel their degree of JI is low, they may actually choose to do so (Sugiharjo et al., 2021). Employees who are invested in their work (have a high degree of JI) have a more positive effect on the link between JS and SQ than those who aren't, as mentioned by Lee and Chen (2013). In other words, among highly engaged

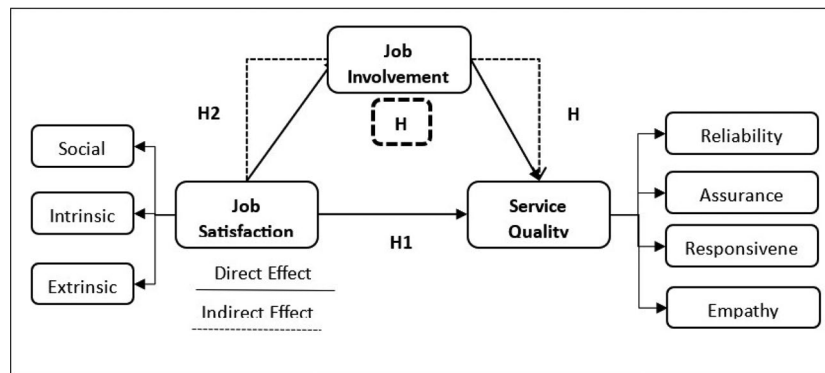


Figure 1. Conceptual framework of the study.

individuals in their work and organization, job satisfaction significantly influences the quality of the rendered services. These studies, however, add to the evidence supporting (Mathieu & Zajac, 1990) results and emphasize the importance of JI in shaping staff behaviors, and its impact on the interaction between JS, both of which have an impact on SQ. This research proposes the following hypotheses

H2. There is a positive relationship between JS and JI in higher education.

H3. There is a positive relationship between JI and SQ in higher education.

H4. JI plays a mediating role in JS and SQ relationship in higher education.

The present study is grounded on a conceptual framework that encompasses the JS as an independent variable, SQ as the dependent variable and JI as the mediating variable (see Figure 1).

Methodology

This research integrates the perspectives of customers on service quality and service providers conceptually. A cross-sectional survey was used in this study employing a two-sample research approach. For the purpose of gathering information from the targeted respondents, two sets of questionnaires were used (one set was used to gather information about the JS and JI of the academic staff at Aden University, and the second set was used to gather information about SQ from the perception of the students).

The first component of the questionnaire asks about demographic details including gender, age, education, employment history and so on. Each questionnaire has two or more sections. The target respondents' opinions on the components under examination (i.e. work satisfaction, involvement in the job and customer-perceived service quality) were questioned in the second and third portions of the questionnaire.

To ensure simple comparability, the consumer questionnaire and the academic staff questionnaire were both encoded with the same code before being sent. Customers frequently rate the quality of service primarily on how well an individual employee performed during a service encounter (Al-Refaei et al., 2019; Gazzoli et al., 2013; Gould-Williams & Davies, 2005) rather than an overall or group rating. For this reason, this technique was adopted in this work. Five students were chosen at random to provide their opinions on how well the chosen academic staff provided services. Five students were chosen for each sample (in this case, academic staff), which is a suitable quantity given that it is significantly greater than the typical number of customers chosen in prior studies (Gazzoli et al., 2013; Kolar et al., 2018; A. Zumrah, 2015).

Sample size and sampling method

The study includes 1776 participants from 2 sub-samples. The first set of samples was 296 lecturers, while the second set was 1480 students. Researchers obtained samples from each stratum as part of the investigation using the random stratified sampling technique. Implementing this method guarantees that

researchers acquire a sample from every stratum (Saunders et al., 2019). The nine faculties and centers of Aden University are referred to as the strata in this study.

Measures

Job satisfaction (JS)

Schnake (1983) conceptualized JS in terms of 3 dimensions: extrinsic, intrinsic and social. In this study, 11 questions derived from Schnake (1983) were used to gauge job satisfaction on SQ. This measurement was chosen because it accounts for social, intrinsic and extrinsic facets of job satisfaction. Three social satisfaction questions, four extrinsic satisfaction questions and four questions to gauge intrinsic satisfaction were all employed. 'A 5-point Likert scale ranging' as '1=highly unsatisfied' to '5=strongly satisfied' was used to rate the respond to the survey questions. The values Alpha were $\alpha=0.84$, 0.87 and 0.85, respectively.

Job involvement (JI)

Seven items from the JI scale originally established by Lodahl and Kejner (1965) were modified to measure job involvement. illustrative items were 'I value my job far more than just the money', 'I find that the initial hours of my workday go by quickly since I truly love carrying out the tasks that I have to do each day' and 'My job definitely piques my attention'. 'A 5-point Likert scale ranging' as '1=strongly disagree' to '5=strongly agree' was used to rate the response to the survey questions. The test resulted in a satisfactory value of $\alpha=0.87$.

Service quality (SQ)

Four criteria were used in this study to evaluate SQ: responsiveness, assurance, reliability and empathy. Eighteen items from Parasuraman et al. (1988) SERVQUAL scale were used for this purpose. These four dimensions were chosen because it was discovered that the tangibles dimension did not affect how customers perceived SQ (Malhotra & Mukherjee, 2004). Previous studies' 'Alpha values' for each dimension ranged from 0.87 to 0.89 (Parasuraman et al., 1988). The measurement scale for each variable in this investigation is displayed in Appendix. Table 1 shows the measurement scale of all variables and items in this study and the resources.

Data collection procedures

Before distributing the questionnaire to the respondents, the researcher obtained Ethical approval from Aden University (Refe 102/3/2/1) to distribute the questionnaire to the academic staff and their students, with informed consent from all participants ensuring voluntary participation and data confidentiality. The questionnaire was given to the instructors in the classrooms (physically) after the lectures. Five of the customers (students) were asked to rate the level of service each individual of academic staff provided. Each survey of (student and staff) was coded throughout the process to make it simple to compare the customers' evaluations of the caliber of service offered by various employees. Only 306 of the 460 surveys that were distributed to faculty members (a response rate of 66.5%). For this study, only 296 of surveys were used. A total of 2300 questionnaires were given out to the customers (students), with a subsequent return of 1530 completed questionnaires, resulting in a response rate of 66.5%. Out of them, a mere 1480 were utilized for purpose analysis.

The necessary measures were implemented subsequent to the data-gathering process in order to ensure the precision and comprehensiveness of the data. Each survey's response was examined to weed out any missing information. It was made sure that the student's opinions of the level of each employee's service matched their perceptions of each employee's JS and JI. 'Using the compute variable tool in SPSS', five customers' (students) opinions on each component of an employee's quality of service were gathered, 'yielding an average of five responses' for each component of service offered by each employee. This method made it possible to comprehend how staff members' attitudes and behaviors (JS and JI) affect customers' (students) assessments of SQ and verify that personal bias did not affect the outcomes. This thorough methodology made sure the resulting dataset fairly represented the views of both

Table 1. Measurement scales.

Variable	Dimension	Item	Code
Job Satisfaction (JS) Schnake	Social	The friendliness of the people you work with	SS1
		The way you are treated by the people you work with	SS2
		The respect you receive from the people you work with	SS3
	Extrinsic	The chances you have to accomplish something worthwhile	ES4
		The amount of pay you get	ES5
		The fringe benefits you receive	ES6
		The chance of doing something that makes you feel good about yourself	ES7
	Intrinsic	The chances you have to take part in making decisions	IS8
		The amount of job security you have	IS9
		The opportunity to develop your skills and abilities	IS10
		The amount of freedom you have in your job	IS11
Job Involvement (JI) Lodahl and Kejner		My job means a lot more to me than just money	JI1
		I am really interested in my work.	JI2
		I would probably keep working even if I didn't need the money	JI3
		The most important things that happen to me involve my work	JI4
		For me, the first few hours at work really fly by	JI5
		I actually enjoy performing the daily activities that make up My job	JI6
		I look forward to coming to work each day	JI7
Service Quality (SQ) Parasuraman, et al.	Reliability	When lecturers promise to do something by a certain time, they do so.	R1
		When I have a problem, the lecturer seems sympathetic and reassuring.	R2
		The lecturer is dependable.	R3.
		The lecturers provided the service at the timeline they promised to do so.	R4
		The lecturers keep accurate records of their work.	R5
	Responsiveness	The lecturer tells which series will be performed	Re1
		I receive prompt series from the lecturer	Re2
		The lecturer is always willing to help others	Re3
	Assurance	The lecturers respond to another request prompt even if they are too busy	Re4
		I can trust the lecturer	As1
		I feel safe in my transactions with the lecturer	As2
	Empathy	The lecturer is polite	As3
		I get adequate support from the lecturer to do my job	As4
		The lecturer gives me individual attention	Em1
		The lecturer gives me personal attention	Em2
		The lecturer knows my needs	Em3
		The lecturer has my best interests at heart	Em4
		The lecturer has operating hours convenient to all his/her students	Em5

students and staff and gave insightful information about the organization's capacity to deliver services to their customers with the required standard.

Data analysis

Data analysis was done in two phases in this work. SPSS 26.0 was used in the initial stage of the descriptive statistics and analysis. AMOS v.26 was used for 'structural equation modeling (SEM)' in the second stage. CFA) was performed at the beginning of this step to make sure the scales were appropriate for the task at hand. The following step involved SEM-based direct hypothesis testing, after which the route coefficient of indirect links was calculated using bootstrapping. To ascertain the mediating that links the variables.

Results

Respondents' demographic profile

Descriptive statistics were employed to depict the demographic information of the study respondents.

Lecturers' profile

Table 1 presents the demographic characteristics of the 296 individuals who participated in the study; male employees account for 72.5% of the workforce while female employees account for 27.5%. The participants' ages ranged from under 40 (40.9%) to over 40 (59.1%). A Ph.D. is held by 50.3% of participants, followed by a Master's degree by 19.9% and a Bachelor's degree by 27.7%. With regards to the duration of work, it is observed that 6.5% of the university's employees have maintained their affiliation with the institution for a period of ten years or longer, compared to 39.5% who have been there for ten

Table 2. The demographic profiles of the lecturers.

Profile	classification	Frequencies	(%) Percentage
Gender	Male	215	72.60
	Female	81	27.40
Age	20 to 29 yrs	13	4.40
	30 to 39 yrs	97	32.80
	40 to 49 yrs	115	38.90
	>50 yrs	71	24.00
Academic qualification	Bachelor's	60	20.30
	Master's	59	19.90
	Ph.D.	177	59.80
Work experience	<10years	117	39.50
	>10years	179	60.50

Table 3. The obtained values for normality and multi-collinearity.

Variables	N	Mean	SD	Skewness	Kurtosis	VIF
JS	296	3.387	0.424	−0.380	0.201	1.041
JI	296	3.479	0.664	−0.090	−0.318	1.041
SQ	296	3.472	0.453	−0.036	−0.036	–
Valid N (list-wise)	296					

years or less. The demographic profile of the lecturers who participated in the study is presented in Table 2.

Students profile

There were 1480 total students used as participants in this study, of whom 34.9% are female and 65.1% are male. There are 35.3%, 26.6%, 22.6%, 14.5% and 1% of students in levels 1, 2, 3, 4 and 5, respectively. In terms of the faculties, there are 9.8% of students enrolled in the 'literature and languages faculty', 9.8% registered in 'medicine & health sciences', 15.9% enrolled in the 'faculty of economics and science management', 37.2% attended in the 'faculty of education', 11.5% enrolled in the 'faculty of engineering', 3.7% registered in the 'faculty of sciences', 4.1% enrolled in the 'faculty of oil and minerals', 7.8% enrolled in the 'faculty of sharia and law'. Finally, there are 1% of students enrolled in 'the institute of continuing education, computer and languages'.

Normality and multicollinearity

The evaluation of normality involved an assessment of the dataset's 'skewness and kurtosis values' (J. F. Hair, Page, et al., 2020). Skewness describes the degree of symmetry in the distribution of a variable, while kurtosis evaluates the peak intensity of the distribution (J. F. Hair, Page, et al., 2020). As a general guideline, data distribution is considered normal when the 'skewness and kurtosis values' fall within the range of 2.58 (Ali et al., 2022; Alzoraiki et al., 2023; J. F. Hair, Howard, et al., 2020). The findings indicate 'kurtosis values' of -0.036 and 0.210, along with skewness values of -0.380 and 0.036. Consequently, the data analysis can be considered normal distribution. However, the assessment of 'multi-collinearity' was conducted using the 'variance inflation factor (VIF)', yielding values of 1.041. According to J. Hair et al. (2019), VIF values for each factors (refer to Table 3) should be below 10. As such, there are no issues with 'multi-collinearity' among the independent variables in the current study. The mean and standard deviation, on the other hand, had ranges of 3.387-3.479 and 0.424-0.664, respectively. The calculated statistical results for each variable are shown in Table 2.

Measurement model's assessment

The 36 observable features were used to produce the three 'latent variables' (JS, JI and SQ) that make up the proposed measurement model for the present study. The CFA results for the measurement model demonstrated that the model fit was adequate (see Figure 1). The χ^2 statistic = 956.526, RMSEA = 0.047, CFI = 0.96; df = 583, CMINDF = 1.64 and TLI = 0.959. However, According to Hair, Matthew, et al. (2020), the factor loading for every item was (>0.60). The loading ranges for JS, JI and SQ were 0.68 to 0.84, 0.71 to 0.83 and 0.81 to 0.98, respectively. In contrast, each construct's results showed a significant CR. CR for JS = 0.802, JI = 0.92 and SQ = 0.816, all of which are more than the recommended 0.70 value.

Table 4. Overall reliability and validity (constructs) values for the measurement model.

Construct	Indicators	Loading	CA	CR	AVE	MSV	MaxR(H)
JS	SS1	0.690	087	0.8020	0.5750	0.3710	0.8100
	SS2	0.750					
	SS3	0.750					
	ES4	0.750					
	ES5	0.840					
	SS6	0.810					
	ES7	0.700					
	IS8	0.680					
	IS9	0.820					
	IS10	0.760					
	IS11	0.710					
JI	JI1	0.740	92	0.920	0.620	0.1360	0.930
	JI2	0.760					
	JI3	0.710					
	JI4	0.910					
	JI5	0.800					
	JI6	0.830					
	JI7	0.760					
SQ	R1	0.810	0.950	0.8160	0.5280	0.3710	0.8290
	R2	0.830					
	R3.	0.920					
	R4	0.920					
	R5	0.940					
	Re1	0.940					
	Re2	0.960					
	Re3	0.960					
	Re4	0.910					
	As1	0.890					
	As2	0.810					
	As3	0.900					
	As4	0.900					
	Em1	0.960					
	Em2	0.980					
	Em3	0.890					
	Em4	0.940					
	Em5	0.890					

Table 5. FLC and HTMT.

Variable	Panel A: FLC			Panel B: HTMT		
	JS	JI	SQ	JS	JI	SQ
JS	.760			–		
JI	.260***	.812		.221	–	
SQ	.608***	.358***	.726	.516	.320	–

Note: *** Significant correlation value at 0.05 level (2-tailed).

As recommended by J. Hair et al. (2019), the AVE score for each construct was > 0.50. The relative AVE values were 0.575, 0.62 and 0.53. Furthermore, for all variables, the maximum shared variance (MSV) ranged from 0.08 to 0.16. These levels, however, were lower than the AVE value. In contrast, the range of the maximum reliability (MaxR-H) was 0.92 to 0.98; these values >0.80. As a result, the model's convergent validity was verified (see Table 4).

The Discriminant Validity (DV) of this model employed in earlier investigations was assessed using two different techniques according to previous studies (Ghumiem et al., 2023; A. R. B. Zumrah et al., 2021). The 'Fornell Larcker criterion technique' (FIC) created by Fornell and Larcker (1981), is the first technique and is used to assess the DV of a model (Ghumiem & Alawi, 2022). It stipulates that 'for each construct', the 'square root of the AVE must be greater than the squared correlation estimates for the other constructs that are part of the measurement model' (Hair, Matthew, et al., 2020). A significant conclusion from the DV analysis is that the squared correlation of all the components was significantly less than 'the square root of the AVE values'. The values of all the diagonal components of the correlation matrix exceeded the off-diagonal components in the relevant columns and rows, as shown in Panel A of Table 5, demonstrating that all constructs displayed the required DV.

The 'Heterotrait-Monotrait Ratio (HTMT)' which was suggested by Henseler et al. (2015) for evaluating a model's DV, is the second technique. Although FLC is swiftly rising to the top of the list of

techniques for assessing DV, it has been shown to be ineffective in a variety of study scenarios. As a result, none of the construct values in the current study were greater than 0.85, as suggested by Henseler et al. (2015). Therefore, as shown in Table 5 (Panel B), the DV for all structures was proven based on the HTMT.

Results of the SEM and hypotheses testing

The SEM was employed to test the proposed hypotheses for this work; it investigates how JI & JS affect the level of perception of customers on the provided services. The model fit indices for the structural model (SM) show a satisfactory fit with the following values: χ^2 statistic = 992.271, CFI = 0.96, TLI = 0.95, df = 616, CMINDF = 1.61, RMSEA = 0.046. According to (Hair, Matthew, et al., 2020; Kline, 2015), these indices revealed an excellent model fit.

Result of the direct hypotheses

The results of the hypothesis tests conducted across the SM are shown in Table 6. This table also includes the Beta value, which illustrates how JS and JI affect SQ. The direction of influence is reflected in the beta value. The SM also includes the p-value and t-statistics that indicate how significant the link is. The direct effects of JS on service quality ($\beta = .45$, $p = 0.000$, $t = 5.96$), JS's direct effect on JI ($\beta = 0.42$, $p = 0.000$, $t = 3.59$) and JI's effect on service quality ($\beta = 0.109$, $p = 0.000$, $t = 3.38$) were all demonstrated by the outcomes of the current SM's 'Standardized regression estimation'. According to Byrne (2016), the findings show that the t-statistics value is higher than (1.96) the cutoff point, and the p-value is 0.05, indicating that all of the direct Hypotheses are significant.

The indirect effect of JS on SQ was investigated using the bootstrapping approach, and the findings supported JI's mediating role in the relationship of JS with SQ ($\beta = 0.32$; $p = 0.004$). Since the p-value was < 0.05 , the results supported H4. The results of the JI testing's indirect impact are displayed in Table 7.

The VAF value, which represents the ratio of indirect to/total effect path coefficients, is useful for determining the proportion of mediations. It allows for calculating the relative size of indirect pathways compared to direct ways. The mediation proportion was calculated using the methodology proposed by Nitzi et al. (2016). The following equation could be applied to achieve this.

$$VAF = \frac{a \times b}{(a \times b) + c}$$

The coefficient of the indirect path from JS to SQ through JI, as presented in Table 7 and calculated as 0.046 (0.42 0.109), demonstrates statistical significance due to the p-value of 0.007 (refer to Table 6). As illustrated in Table 8, the ratio of the indirect effect to the total impact (VAF) was 0.092. This finding

Table 6. The direct effect result 'Standardized regression estimation'.

No	Path	Beta	SD	t-Value	p-value	Result
H1	JS → SQ	0.451	0.0760	5.964	***	Accepted
H2	JS → JI	0.420	0.117	3.594	***	Accepted
H3	JI → SQ	0.109	0.032	3.381	***	Accepted

Note: *** $p < 0.000$.

Table 7. Indirect effect of JI.

No	Structural path	Estimate		S.E	95% CI		p-value	Decision
		USD	SD		Lower	Upper		
H4	JS → JI → SQ	0.046	0.056	0.0210	0.0180	0.9930	0.007	Accepted

Abbreviations: USD = Unstandardized; SD = Standardized.

Table 8. The extent of the mediating impact of OC between JS & SQ.

Indirect effect	JS → SQ	JS → JI (a)	JI → SQ (b)	a × b	a × b + c	VAF	Mediation type
JS → JI → SQ	0.451	0.420	0.109	0.046	0.497	0.092	Partial mediation

indicates that JS and the mediation channel of JI collectively explain 9.2% of the variability observed in service quality. Consequently, JI somewhat mediated the JS-SQ relationship, supporting Hypothesis 4.

Discussion

This study constructed and verified a model that looks at the link between JI, JS and SQ in universities and colleges. The results of this empirical investigation showed that JS directly and significantly had a favorable impact on both JI and SQ. Job participation also significantly had a good impact on SQ. Additionally, it was found that JI had a mediating role in the JS-SQ relationship, which means that raising JS will also raise JI and SQ. Furthermore, customers' perception of service quality will be improved when job satisfaction and employee involvement are both improved.

The findings of H1 show that employees' job satisfaction is influenced by an organization's initiative to meet their demands (intrinsic, extrinsic and social). Since only happy workers can deliver great services, when workers have a favorable impression of their work, it will favorably show on their customers' perception of SQ, and vice versa. Employees' opinions of their company will affect how they perceive the SQ they receive, as it is hard for unhappy or dissatisfied workers to provide the required level of service (Finanda & Lutfi, 2018; Ukil, 2016). These findings confirm the statements made by researchers who hypothesized that consumers' perceptions of SQ are influenced by employees' perceptions of their company (Al-Refaei et al., 2019; Gazzoli et al., 2013; Schneider & Bowen, 1985; Shen & Tang, 2018).

According to the empirical results of H2, JS significantly and favorably affected JI directly. This finding suggests that as lecturers' JS rises, so will their level of engagement with their work. Earlier research (Ćulibrk et al., 2018; Gopinath et al., 2020; Wegge et al., 2007) has repeatedly shown the value of JS in promoting JI. The outcomes of this work agreed with other studies that identified a connection between JS and JI, such as (Al-Refaei et al., 2023; Gopinath, 2020), which found that JS are strongly related to JI and SQ, and other scholars that established JS-JI relationships (Demir, 2020; Mathieu & Farr, 1991; Mathieu & Zajac, 1990). The current study expands on these conclusions by offering more proof of the beneficial link between JS & JI. This emphasizes the importance for businesses to place more premium on employee job satisfaction (JS), as it is a key element in encouraging JI by building a work environment that is favorable to JS. The link between JI and SQ was reinforced by the presented empirical evidence of H3 in this work. It showed that a key element in establishing the level of SQ that customers perceive is how engaged employees are in their work, particularly lecturers who have direct contact with students.

Correspondingly H4 showed that teachers are more likely to stick with their jobs and the organization if they feel that their institutions value their involvement and are concerned about their welfare (Ateeq, Alaghbari, et al., 2024; Eisenberger et al., 1990). When it comes to delivering SQ that meets the student's needs, this increased participation typically translates into a stronger desire to go above and beyond. This empirical analysis' findings concur with past studies that established a connection between JI and SQ. The involvement of the personnel who interact with clients directly has a major impact on how well clients evaluate the quality of the rendered service (Malhotra & Mukherjee, 2004). Higher SQ levels to customers are the outcome of motivated personnel who are more inclined to stick with the job and organization and go above and beyond to perform effectively (Gould-Williams & Davies, 2005). However, firms may struggle to deliver the proper level of SQ if employees are reluctant to put forth efforts and commit their energy to the good of the organization by improving SQ.

According to the mediating study of the role of job involvement, it appears that JI is crucial in determining how JS and SQ relate to one another. Job involvement is specifically mentioned as a mediating factor that influences the degree and direction of these variables' interactions. The 'study's findings specifically showed that JI mediates JS-SQ link, which raises the possibility that staff members who are given more opportunities for JI may be more willing to use the satisfaction and passion in their work into improved customer service. While employees who are less engaged with their work (JI) may, on the other hand, be dissatisfied and have a less link of JS and' SQ.

In today's competitive business environment, fostering a positive workplace culture and addressing individual and organizational factors to optimize service delivery is crucial due to the complex relationships between JS, JI and SQ. Complex psychological and organizational elements affect JS, JI and SQ. Job satisfaction, which is contentment and fulfillment at work, increases JI because satisfied workers are

more engaged and committed (Al-Refaei et al., 2023). Job involvement improves service quality because motivated and engaged employees work harder to meet customer needs and provide excellent service. When employees feel supported by their employer, they will be more satisfied and more engaged, and then improving service quality.

The results of this investigation agreed with other scholars who discovered that when workers feel valued in a firm, they invest more time and energy to work, thereby their improving JS (Blachut, 2012). The findings concur with (Blau & Boal, 1987), who discovered that JS, and JI affect workers' desire to leave their current company. The current finding is also in line with (Ariani, 2015; Finanda & Lutfi, 2018), who discovered a stronger JS-SQ relationship among workers with high levels of JI. Additionally, this research concludes by emphasizing the importance of JI in affecting workers' actions and attitudes, which in turn affect service quality.

Research contribution

The inclusion of a novel mediating model that examines the influence of key components of employee work attitudes (JI and JS) on SQ represents a noteworthy contribution of this research to the existing body of literature. To enhance comprehension of the correlation between service quality and employee work attitudes, this research employed a dual-perspective methodology, encompassing the gathering of data from both staff members and students. Subsequently, it aligns the customers' opinion of service quality with the specific performance exhibited by employees throughout service encounters. This particular technique stands out due to the fact that previous studies predominantly focused on a certain perspective, either that of the customers or the staff. The research contributes to the understanding of employee attitudes and behavior in the workplace by emphasizing the need to study the various components of employee work attitudes as a whole, rather than individually (Blau & Boal, 1987). Furthermore, this study examined the significance of social job satisfaction as a crucial element of service quality due to its impact on employee JS. This study is a vital contribution to the current literature on employee work attitudes and service quality by providing valuable insights that can assist organizations in enhancing their understanding and management of employees for the purpose of improving service quality.

Practical implication

There are different implications of this study for employees (service providers), students (service receivers), organizations and society.

For students

The employability, satisfaction and loyalty of students at universities and colleges depend on the quality of the services they receive. Skills like communication, problem-solving and teamwork can be improved through entrepreneurship training and teaching methods that place a strong emphasis on real-world experience and interaction with business partners (Alharahsheh & Pius, 2021). Research has indicated that the implementation of high-service quality can significantly improve the ability of students to generate job opportunities for both themselves and others (Pardo-Garcia & Barac, 2020). Owing to the importance of employability skills for students' workplace success, higher education institutions must place a high priority on providing quality education services.

For employees

These results demonstrate that employees will reciprocate with greater JS, JI, dedication and high QS to meet the needs of their employers and clients when a company meets their intrinsic, extrinsic and social needs. As a result, it is true what is currently being discovered, is that high JS, and high levels of JI have a significant impact on SQ in universities and colleges. However, providing high-quality service is crucial for both customers and employees as well. Employees who deliver high-quality services can gain from it in a variety of ways, which ultimately promotes job satisfaction, professional achievement and personal development.

Employees who perform excellently, such as offering high SQ, are often satisfied (Armstrong & Brown, 2019). Additionally, when employees give good SQ, their job satisfaction will indirectly boost their life satisfaction (Steel et al., 2019). The provision of high-quality services can aid in an employee's professional development and the acquisition of new abilities. Employees who consistently deliver first-rate customer service might learn new skills, such as how to communicate better and solve problems, which can be helpful in their current position and the future. When employees perform high-quality service, their employer will reward them in three different ways: (i) with base compensation (a fixed salary), (ii) with incentive pay and (iii) with indirect compensation (unemployment benefits, vacation and health insurance).

For organizations

For higher education organizations, providing high-quality service is crucial because it can affect their student satisfaction and reputation, it also affects students' perceptions of the institution and their loyalty and, ultimately, their ability to succeed in the market and gain a significant competitive advantage (Gong & Yi, 2018; Kasiri et al., 2017; Meesala & Paul, 2018). Universities that don't provide their students with the right service quality will not thrive and cannot compete favorably in the sector. The students' encounters with poor service quality may have an effect on the university's reputation (Alshuhumi et al., 2023). According to earlier research, more people tend to hear and know about poor customer relationships compared to the good ones. Positive words can help an organization increase its customer base, whilst negative speech can actually work against that organization's efficacy and legitimacy (Al-Refaei et al., 2023; Liu & Lee, 2016; Mohtasham et al., 2017). Therefore, in order to attract and keep clients, it is essential to have engaged and content employees who will deliver the required level of SQ (the same criteria apply to academic institutions). In order to offer the expected level of SQ, it is crucial to have satisfied, involved and committed personnel.

For society

The government has acknowledged the universities and colleges are among its allies in accomplishing its objective of becoming a knowledge-based economy. They are essential to the competitiveness and long-term growth of a society's economy. Higher education institutions can help create a qualified workforce, which is crucial for the expansion of the economy via the provision of quality instruction and enhancing students' knowledge and abilities. 'Otherwise, the provision of low-quality education could result in the limited ability of institutions of higher learning to contribute to the advancement of society. However, as was previously mentioned, colleges that do not provide the appropriate degree of care to their students will lose their students' loyalty, market share and ability to compete in the education industry. Students' experiences with poor service quality may have an effect on the university's reputation.' Universities must therefore improve their staff members' JS, OC and JI in order to raise student perceptions of SQ.

Study's limitations and direction for further work

The results of this research cannot be generalized to other institutions of higher learning because the study data came from just one university in Yemen, and the research focused only on the SQ offered by universities and colleges. The result of the current study cannot be generalized to other countries because cultural differences can affect the results of the relationship between JS, JI and SQ because employees' attitudes may differ according to different cultural contexts in other countries. Future research could benefit from conducting experimental or longitudinal studies to examine the relationship between JS, JI and SQ. Additionally, exploring specific dimensions of job satisfaction and job involvement in deeper detail would provide valuable insights in this field. Future studies may therefore concentrate on other antecedents of JS, JI (such as HRM practices, culture, POS and LMX), as well as consumers' predictions, or satisfaction of service quality. The analysis can also be emulated to encompass a variety of additional services. This model can also be revisited in future studies by looking at the antecedents of JS. The additional effects of JS, such as minimizing absenteeism, leave intentions or turnover, which may

influence SQ, were not considered in this work, A more in-depth analysis of the demographic profiles of lecturers and their potential impact on JS, JI and SQ would provide a more comprehensive understanding of the study's outcomes. Therefore, these factors can mediate the JS-SQ link in future research.

Conclusion

This study examined the impact of job satisfaction (JS) and job involvement (JI) on service quality (SQ) within the higher education sector. The findings revealed a significant and positive correlation between JS, JI and SQ. The results indicate that organizations prioritizing employee welfare experience improvements in both JS and JI, which in turn enhances the quality of services provided. Conversely, organizations that neglect employee welfare may face challenges in achieving customer satisfaction, because unsatisfied employees will produce unsatisfied customers, as their staff may be less inclined to deliver the level of service desired by consumers.

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Author contributions

Abd Al-Aziz Al-refaei: Writing original draft and data collection. Hairuddin Mohd Ali: Final review of the version to be published and supervision. Ali Ateeq: Data analysis (CFA, SEM). Abdulhadi Ibrahim: Writing - review and editing and investigation. Siddig Ibrahim: Final review of the version to be published. Mohammed Alzoraiki: Methodology, validation. Marwan Milhem: Final review of the version. Baligh Beshr: Descriptive data analysis and interpretation of the data.

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About the authors

Abd Al-Aziz Al-refaei holds a Ph.D. in human resource management from the Islamic Science University of Malaysia (USIM). He did a post-doctoral fellowship at the Research Management Centre, International Islamic University Malaysia (IIUM). currently, Dr. Al-refaei is Assistant Professor at the Faculty of Business and Accounting, Lincoln University College, Malaysia. His research interests focus on HRM, HRD, Leadership, service quality, and organizational behavior.

Hairuddin Bin Mohd Ali is a Professor of Educational Management and Leadership at the International Islamic University Malaysia (IIUM). He was the Head of the Institute of Education (INSTED), and Head of Department, Social Foundations and Educational Leadership (IIUM). His research interests focus on Educational Management, Educational Leadership, Strategic Leadership, and Educational Planning.

Dr. Ali Ateeq, an Assistant Professor at Gulf University, leads community research and engagement in the College of Administrative and Financial Sciences. Renowned for his high-impact publications, Dr. Ateeq excels in research and data analysis. He contributes as an editor and reviewer in prestigious journals and is actively involved with international organizations like IEEE and the American Heart Association, showcasing his global influence and commitment to academic excellence. My research area of interest is focused on Leadership Styles, Business ethics. AI, Employee Engagement, HRM, OB, HR Planning, Training and Development, Employees performance, HRIS, Emotional intelligence, and Employees performance, Sustainability. business information system.

Abdulhadi Ibrahim is an Assistant Professor of Accounting and the coach of the Team Entrepreneurship program at the College of Business Administration, A'Sharqiyah University. With extensive experience in academia, he has taught both undergraduate and graduate courses, specializing in Financial Accounting, Auditing and Accountability, Managerial Accounting, and Entrepreneurship. His research interests encompass Financial Accounting and Reporting, Corporate Governance, and Entrepreneurship.

Dr. Siddig Ibrahim is an accomplished academic with a wealth of experience in the field of marketing. Dr. Ibrahim pursued a Ph.D. in Strategic Marketing from Universiti Sains Malaysia. Since September 2019, he has served as an Associate Professor of Marketing at Arab Open University-Bahrain. Dr. Ibrahim's journey in academia began at the College of Business Studies, Sudan University of Science and Technology, where he dedicated 18 years of his career. During this time, he held the esteemed position of Dean of the College of Business Studies. Over the course of his impressive 24-year career, Dr. Siddig Balal Ibrahim's remarkable journey stands as a testament to his commitment to education, research, and service.

Dr. Mohammed Alzoraiki is a passionate researcher with expertise in various domains, including Human Resource Management, Leadership, Organizational Performance, Educational Leadership, Organizational Management, Business Management, Research Methodology, and Quantitative Data Analysis. His interdisciplinary research interests allow him to contribute valuable insights to the field of HRM. In addition to his academic pursuits, Dr. Alzoraiki has taken on significant leadership roles. He has served as the Chair of the College Research Committee at Gulf University, fostering a vibrant research culture and promoting scholarly excellence. Furthermore, he has been the Managing Editor of the International Journal of Intellectual Human Resource Management (IJHRM), overseeing the editorial process and ensuring the dissemination of high-quality research in the field. Through his teaching, research, and administrative contributions, Dr. Alzoraiki continues to make a significant impact on the development of human resource management practices and the advancement of knowledge in his areas of expertise.

Dr. Marwan Milhem has a practical and teaching experience over 17 years in the field of Human Resource Management, HR Planning & Recruitment Processes, Total Quality Management, Compensation & Benefits, HR Policy and Procedure, Performance Management, Job Analysis, Training and Development, Organizational Behavior, Strategic HRM, Principles of Business Management, Planning and Monitoring Teamwork, Diversity at workplace, and HR guiding & Counselling. Currently Dr. Marwan working as Acting Dean in the college of Administrative and Financial Sciences at Gulf University -Bahrain. Besides that, Dr. Marwan have a Doctor of Philosophy in Business Management in specialization area Human Resource Management from UniSA University, Malaysia, and a master degree in Human Resources Management from UUM university, Malaysia. My research area of interest is focused on Leadership Styles, Employee Engagement, HRM, OB, HR Planning, Training and Development, Employees performance, HRIS, Emotional intelligence, and Employees performance.

Dr. Baligh Beshr, Associate Professor. PHD in Human Resource Management – Abdelmalek Saadi University – Morocco 2014. Master's degree from Abdelmalek Al-Saadi University, Kingdom of Morocco, Specialization: Management and Development, Specialization: Human Resources Management 2008. Bachelor's degree from Dhamar University, College of Administrative Sciences, majoring in Business Administration and Marketing, Dhamar University, Yemen, 2002. British Fellowship Certificate from the Higher Education Academy in Britain, 10-8-2018. Acertified international trainer in human development by the International Federation of Human Resources and the International Business Academy in Kingstone Britain and the International Academy for Training in UK.

ORCID

Abd Al-Aziz Al-refaei  <http://orcid.org/0000-0002-9786-9276>

Data availability statement

Data supporting this research article are available upon request from the corresponding author, Abd Al-Aziz Al-refaei at ah_alrefaei@yahoo.com, subject to approval and in compliance with ethical considerations.

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Appendix. The Questionnaire Used to Collect the Data for This Study

A1. Demographic information

Please tick the answer appropriate to you or fill in the blanks

Gander	Age	Your qualification:	Your experience in this university
☐ Male	☐ 20-29	☐ Undergraduate	☐ < 10 Years
☐ Female	☐ 30-39	☐ Master	☐ > 10 years
	☐ 40-49	☐ PhD	
	☐ Above 50		

A2

A2.1. Job satisfaction

Please circle the level of agreement on each of the statements below with regard to your attitudes and behavior toward your University.

1= very dissatisfaction		2= Dissatisfaction		3= Natural		4= satisfaction		5= very satisfaction	
No	Variable	1	2	3	4	5			
1	The fringe benefits you receive								
2	The friendliness of the people you work with								
3	The respect you receive from the people you work with								
4	The chances you have to accomplish something worthwhile								
5	The amount of pay you get								
6	The chances you have to do something that makes you feel good about yourself as a person								
7	The way you are treated by the people you work with								
8	The chances you have to take part in making decisions								
9	The amount of job security you have								
10	The opportunity to develop your skills and abilities								
11	The amount of freedom you have on your job								

A2.2. Job involvement

Please circle the level of agreement on each of the statements below about job involvement

1=Strongly disagree		2= Disagree		3= Neutral		4= Agree		5= Strongly agree	
No	Variable	1	2	3	4	5			
1	My job means a lot more to me than just money								
2	The major satisfaction in my life comes from my job.								
3	I am really interested in my work.								
4	I would probably keep working even if I didn't need the money								
5	The most important things that happen to me involve my work.								
6	I will stay overtime to finish a job, even if I'm not paid for it								
7	For me, the first few hours at work really fly by								
8	How much do you actually enjoy performing the daily activities that make up your job?								
9	How much do you look forward to coming to work each day								

A2.3. Please circle the level of agreement on each of the statements below with regard to service quality that you received from the lecturer

		1 = Strongly disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly agree		
No	Variable	1	2	3	4	5		
1	When the lecturer promises to do something by a certain time. He/she does so							
2	When I have problem, the lecturer is sympathetic and reassuring							
3	The lecturer is dependable							
4	The lecturer provides series at the time he/she promised to do so							
5	The lecturer keeps their work accurately							
6	The lecturer tells exactly which series will be preformed							
7	I resave prompt series from the lecturer							
8	The lecturer is always willing to help others							
9	The lecturer responds to another request prompt even if he/she is too busy							
10	I can trust the lecturer							
11	I feel safe in my transactions with the lecturer							
12	The lecturer is polite							
13	I get adequate support from the lecturer to do my job							
14	The lecturer gives me individual attention							
15	The lecturer gives me personal attention							
16	The lecturer knows my needs							
17	The lecturer has my best interests at heart							
18	The lecturer has operating hours convenient to all their customers							

Thank you for your Cooperation.