

Impact of a Web-Based Application for Employee Performance Management (EPMS) on Employee Performance: Employees' Opinions

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Abstract

Today's and tomorrow's leaders and managers need to demonstrate competence in employee performance management systems, which should be accurate and fair.

This paper describes employee perceptions of the benefits a web-based application for employee performance management (EPMS) on their performance and identifies employee acceptability of the tool.

A cross-sectional descriptive study was adopted and a validated self-questionnaire used. The study sample consisted of 48 participants and there was a 75% response rate: 85.7% worked for the government. Two-thirds of the participants had previously used a web-based performance appraisal application. Generally, there was considerable agreement upon the positive effects on all aspects (work relations and teamwork, empowerment, evaluation and impact), with the lowest agreement upon the impact on burnout and turnover. The personal characteristics of the respondents, as well as their skills on computers and the internet, did not have any relation with their agreement or their attitude towards the use of the application.

Keywords:

1. Introduction

Managing is a human activity that ensures the coordination of individual efforts to accomplish an organization's aims and objectives. The role of managers has been increasing in importance and complexity because large organizations are considered to be societies that continuously depend on group effort [1].

Management is a generic function that works to solve problems in a creative way. Management may also be defined as the art of securing maximum results with a minimum of effort, so as to achieve maximum success for both employer and employee and give the public the best possible service [2].

The seven management functions, modified later as a management process, consist of planning, organizing, staffing, directing, coordinating, reporting and budgeting. Further defined theories of management throughout the twentieth century have included activities of management, participative management, and employee participation [3-4]. Meanwhile, the five elements of the work system are: task, organizational factors, environment, equipment and technology, and individual. Performance obstacles can arise from any

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element of the work system or from interactions between the elements of the work system [5].

An organization with weak human performance is an organization vulnerable to errors and mistakes. Additionally, workplaces characterized by long working hours or workloads, tight schedules, work distractions and staff turnover weaken the organization's performance. Therefore, managers should seek ways and solutions to reduce workplace distractions and stressful situations that affect employee performance. Further, organizations must create strategies to avoid reliance on memory through the use of protocols, checklists and standardization of work processes. Additionally, they should evaluate how the number of steps, hand offs, and persons involved in carrying out a specific process can be simplified, and how that can be reduced to mitigate the possibility of errors [6].

An organization must have alignment of purpose among the disciplines regarding reward/ recognition and celebration. Performance appraisal is linked to client satisfaction measurements. Reward and recognition programs are needed to promote team accomplishments [7].

Performance appraisals are a standard human resource management practice in most large organizations. To achieve job performance and professional development goals, a formalized annual performance appraisal is required for both staff and supervisors [8]. Constructive feedback through various communication channels will improve employee contributions to the organization's goals [9]. However, an effective performance appraisal system can be difficult to implement, especially if front-line supervisors are responsible for large numbers of staff. Therefore, employee understanding of performance appraisal systems and how they are perceived by the employees for professional development are both important [10]. Thus, managers need to show competency in such areas as performance appraisal systems and motivation [11].

In the era of computers, the internet, and advanced information technology, new solutions have been proposed to help managers in performance appraisal. A large number of business intelligence computer programs and applications are now available for this purpose; the following list shows a few examples:

- Arrival soft - Web Performance Appraisal Software (<http://www.arrivalprojects.com>): utilized for employee appraisals, 360-degree assessments, or both at the same time.
- Bow land Solutions (<http://www.bowlandsolutions.com>): cost-effective online performance appraisal and 360-degree feedback solutions.
- Bulls eye Xpress - 10 Minute Performance Management (<https://bullseyexpress.bepms.com>)
- Business Decisions, Inc (<http://www.businessdecisions.com/>): used to measure and improve an organization's "people" through training, career development, performance and succession planning.
- Employ Wise, Integrated Employee Life Cycle Management Software (<http://www.employwise.com/product/performance-management.html>): this is an automated, employee self-service system that depends on key performance indicators.

Business intelligence (BI) is a set of theories, methodologies, architectures, and technologies that transform raw data into meaningful and useful information for business purposes [12].

"This process ... includes two primary activities: getting data in and getting data out. Getting data in, traditionally referred to as data warehousing, involves moving data from a set of source systems into an integrated data warehouse. Getting data in delivers limited value to an enterprise; only when users and applications access the data and use it to make decisions does the organization realize the full value from its data warehouse. Thus, getting data out receives most attention from organizations. This second activity, which is commonly referred to as BI, consists of business users and applications accessing data

from the data warehouse to perform enterprise reporting, querying, and predictive analytics.” [13].

This paper intended to answer the following questions:

1. What is the perception of the employees in an organization regarding the impact of a web-based application for employee performance management (EPMS) on employees' performance?
2. Would the application of this tool be acceptable to employees?
3. What are the foreseen benefits from an employee viewpoint?
4. What are the employees' related concerns?

Moreover, it aims to describe employee perceptions of the benefits of a web-based application for employee performance management (EPMS) on their performance, in order to identify employee acceptability of the tool and to enumerate employees' related concerns.

This application was built to capture KPIs (key performance indicators) for all key employees and give an interface on which to record and display performance scorecards for all employees. This system will also be linked to other systems in the organization to extract the required data automatically and update the scorecard. Any employee will be able to see the scorecard in real time anywhere via web and phone based applications.

The application of an interactive tool for performance management and appraisal is expected to have a positive impact on employees' performance and consequently on their job satisfaction and retention. The ultimate impact is higher productivity and better organizational outcomes. However, before application of the new tool, it is deemed important to assess the opinions of employees toward the tool, in order to increase the probability of its success and effectiveness.

The study subjects will consist of full-time employees at the time of the study, in the study setting. The only inclusion criterion to be applied is at least one years' experience in the workplace, with no exclusion criteria. The sample size is calculated to estimate an expected prevalence rate of positive opinions regarding the web-based system 50% or more with 5% standard error at 95% confidence level, the required sample size is 100 employees. They were selected through systematic random sampling from the payroll list of names and a Survey Monkey survey was sent to them via email.

2. Literature Review

The performance measurement literature has three important review articles by Bourne *et al.*, Brem *et al.* and a report prepared by the Centre for Business Performance, Cranfield School of Management. Bourne tried to identify practical difficulties and problems to be avoided, based on the findings of previous studies. Meanwhile, the report of the Centre for Business Performance, Cranfield School of Management focused on the criteria of designing systems that can be effective for measuring performance. These included horizontal integration across the organization, and vertical integration through linking strategies to execution of activities, reflection of wants and needs of all key stakeholders, and the ability to communicate insights rather than performance data. Such criteria and other prerequisites were tested in application of performance management systems in small and medium-sized enterprises in a large German study by Brem. The three articles agree on the same conclusion that there is a dearth of related research work and that most studies address the development of theoretical models, but there is a lack of research focused on actual implementation with study of the feasibility, utilization, and other related practical issues [14-15].

Extensive searches of the databases were undertaken by the researcher using a combination of the keywords: “performance appraisal,” “performance management,” “web-based,” “online,” “impact,” “employee,” “perception,” and “opinions.” The search was limited to the period from 2000 to 2014, and the English language (at least for the

abstract). The search revealed no study in Saudi Arabia. However, a number of international studies addressed the issue using various approaches, such as qualitative or quantitative designs, whether observational or interventional, as well as modeling. These are summarized in Table 1. A review of the relevant studies will be discussed according to the settings, purposes, approaches, impact, and related factors.

2.1. Settings

A number of performance appraisal studies were carried out in various countries, from industrialized countries such as the UK [16], the US [17], and China [18], and also developing ones such as Indonesia [19] and Thailand [20]. Also, the studies covered different types of settings and workplaces such as healthcare services [16, 21], enterprises [19, 22], and universities [23]. This demonstrates that the web-based performance appraisal applications are feasible and may be utilized in various types of workplaces with different job categories and in both developed and developing countries [16].

2.2. Purposes of Reviewed Studies that Addressed Web-based Performance Applications

The reviewed studies covered a wide range of purposes pertaining to performance assessment and the development of related tools. The purpose of the study carried out by Archer et al. in the UK, was to develop an instrument for educational supervisors of dentists to measure their effectiveness. The ultimate goal was to improve the performance of these supervisors in their educational and training roles for junior dentists [16].

In another type of healthcare setting in the USA, the purpose was to develop a web-based psychiatric simulation focusing on violence risk assessment as a tool for a department-wide ongoing professional practice evaluation (OPPE) [17]. The outcome would be a good identification of the gaps that needed to be filled in their career development.

In a related study on residents and fellows in the USA [21], the purpose was to develop and test a tool aimed at facilitating the identification and monitoring of their discrepancies in on-call preliminary reports. This would help in identifying the factors underlying such discrepancies and consequently in developing appropriate remedial programs.

Other studies were carried out with the aims of evaluating the performance appraisal systems for employees in an enterprise [22], and for faculty members in a university [23]. Additionally, a study was conducted with the objective of investigating the association between the rates of depression as assessed online and objective measures of impaired workgroup performance [22].

2.3. Approaches and Models

The literature demonstrates the use of several approaches and different models in performance appraisal.

- Archer *et al.* used a focus-group qualitative approach and data analysis through an interpretative thematic method [16].
- Itri *et al.* developed a simple software application (Orion) using open-source tools with their classmates [21].
- Jain used an application of an Analytical Hierarchy Process (AHP) for the calculation of employee performance by a quality assurance department [24].
- Shrestha and Chalidabhongse's approach consisted of three stages: the "Selection Stage," "Appraisal/Evaluation Stage," and the "Development Planning Stage." [20]
- Howell et al. designed a system for performance appraisal in their university that provided both a quantitative metric of time spent on various activities within each mission, and a qualitative metric for the effort expended [23].

2.4. Impact

Generally, most studies reported positive outcomes of the application of web-based systems for performance appraisal.

Archer *et al.* reported success of their tool, with results indicating that dentists' educational supervisors scored well; generally rating themselves lower than they were by their trainees. It was concluded that this instrument has considerable evidence of validity and can provide supervisors with useful evidence of their effectiveness [16].

Gorrindo *et al.* indicated that: "the web-based simulation and email engagement tools were a scalable and efficient way to assess a large number of clinicians in ongoing professional practice evaluation (OPPE) and to identify those who required focused professional practice evaluation." [17]

The results of the application of the Orion system, using open-source tools to facilitate the identification and monitoring of resident and fellow discrepancies in on-call preliminary reports, led to the conclusion that it is a powerful information technology tool that can be used by residency program directors, fellowship programs directors, residents, and fellows to improve radiology education and training [21].

Concerning users' utilization and satisfaction with the system, Shrestha and Chalidabhongse mentioned that the users of the web-based performance appraisal system found the system easy to understand and use and were more satisfied with the overall effectiveness of the system [20]. On the same line, Howell *et al.* reached the conclusion that an electronic database with applications for faculty merit and promotion review is a worthwhile tool, and they suggested using a multidisciplinary team of users [23].

Conversely, Howell *et al.* highlighted that although their web-based performance appraisal system appeared to describe the activities of most faculties fairly accurately, and chairs of test departments were generally enthusiastic, resistance to general implementation still remained [23]. This reluctance or resistance was mainly due to concerns about reliability, validity, and time required for completing the report. Similarly, Tenges, in Indonesia, found that their performance appraisal system still needed some improvement to minimize the possibility of error [19].

2.5. Factors Influencing Web-based Performance Assessment

An important factor that may determine employee acceptability and utilization of web-based performance appraisal tools is their ability and mode of utilization of computer and internet applications. In this regard, Mastrangelo *et al.* investigated the patterns of computer use in workplaces and its impact on the utilization of web-based applications [25]. The main objective of the study was to explore definitions, frequencies, and motivations for personal use of work computers. The study used an online survey method. It was found that there is a distinction between computer use that is counterproductive and that which is merely not productive. They concluded: "While most employees who engaged in computer counter productivity also engaged in computer non-productivity, the inverse was uncommon". The conclusion suggested that there was a need to distinguish between the two when establishing computer policies and internet accessibility. Other studies correlated the human resource management practices with business success [18], and high levels of depressive symptoms with poor performance in a work setting [22]

To conclude, the literature reveals that many attempts have been made to develop and implement web-based applications aimed at appraising employee performance. However, most studies have not measured the impact of these applications on workplace outcomes such as productivity, job satisfaction, decreased burnout, absenteeism, and turnover. Moreover, only one or two of these studies investigated employee opinions regarding the adoption and use of these applications. More importantly, no single study was found in the Kingdom of Saudi Arabia addressing this issue. Therefore, it was deemed important to embark on this study aimed at assessing the impact of a web-based application for

employee performance management (EPMS) on employee performance from the perspective of employees' opinions.

3. Methodologies

The cross-sectional descriptive design used in this study was conducted at a Saudi governmental organization.

The study subjects will consist of full-time employees at the time of the study, in the study setting. The only inclusion criterion to be applied is at least one years' experience in the workplace, with no exclusion criteria. The sample size is calculated to estimate an expected prevalence rate of positive opinions regarding the web-based system 75% or more with 5% standard error at 95% confidence level, and considering a response rate of about 25%, the required sample size is 48 employees. They were selected through systematic random sampling from the payroll list of names and an email with a Survey Monkey was sent to them.

Data was collected using a self-administered questionnaire that was compiled by the researcher. It included the following parts:

- Part I: Socio-demographic data: intended for collection of data pertaining to demographic characteristics of the study subjects, such as age, qualifications, marital status, experience years, etc.
- Part II: This part aimed to obtain opinions about the potential benefits of the web-based performance appraisal system. The responses to the statements were based on a five-point Likert scale ranging from "strongly agree" to "strongly disagree."
- Part III: Open questions were asked related to acceptability and major concerns regarding the application of the system.

3.1. Pilot Study

Upon tool development, the questionnaire was reviewed by experts for content validity and then pilot-tested on about 10% of the number of the study sample. The aim of the pilot was to assess the clarity and feasibility of the tool. The tool used proved to have a high level of reliability with Cronbach alpha coefficients ranging between 0.72 for the domain of work relations and team work to 0.88 for the domains of evaluation and impact. Moreover, the scores of the four domains had significant moderate positive inter-correlations, further fostering their high reliability.

3.2. Ethical Considerations

Upon securing official permission, the researcher met with the administration of the organization to explain the aims and procedures of the study.

Research approval was obtained from the university's scientific research department before starting the study. All principles of ethics in research were followed. The researcher clarified the objectives and aim of the study to employees and obtained their informed consent before asking them to participate. They were informed of their right to refuse participation. The researcher assured participants that confidentiality of any obtained data would be maintained).

3.3. Statistical Analysis

The SPSS 18.0 statistical software package was used for data entry and statistical analysis. Data was presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Confidence limits were computed at a 95% level of confidence.

4. Results

Table 1. Personal Characteristics of Respondents (n=36)

Age	No.	%
<40	18	50.0
40+	18	50.0
Range	32-59	
Gender	No.	%
Male	18	50.0
Female	18	50.0
Highest qualification	No.	%
Bachelor	8	22.2
Master	12	33.3
Doctorate	16	44.4
Experience years	No.	%
<10	13	36.1
10+	23	63.9
Range	0-23	
Job*(1 missing)	No.	%
Governmental	30	85.7
Private	5	14.3

The study sample consisted of 48 participants: 36 returned a completed valid form, with a response rate of 75%. Their ages ranged between 32 and 59 years, with a higher percentage of males (72.2%) as shown in Table 1. Slightly less than half of the sample participants (44.4%) had a doctorate degree. The majority was working for the government (85.7%), and their experience years ranged between 0 and 23 years.

Table 2 indicates generally high computer and internet skills, with 44.4% having high skills in computers and 58.3% in internet skills. Two-thirds of the participants had previously used a web-based performance appraisal application (66.7%), and the majority had considered it a good experience (70.8%)

Table 2. Respondents' Computer and Internet Skills and Experience (n=36)

Computer skills	No.	%
Low	1	2.8
Average	19	52.8
High	16	44.4
Internet skills	No.	%
Low	2	5.6
Average	13	36.1
High	21	58.3
Previously used a web-based performance application	No.	%
No	12	33.3
Yes	24	66.7
Opinion about it (n=24)	No.	%

Excellent	1	4.2
Good	17	70.8
Fair	5	20.8
Bad	1	4.2

As shown in Table 3, there were high percentages of agreement upon all the items concerning the effect of web-based performance appraisal systems on work relations and teamwork, with all items having a median of four – corresponding with “agree.” The highest agreement was upon improving relation with supervisors (83.3%), whereas the lowest was upon mitigating conflicts between staff (61.1%).

Table 3. Respondents’ Agreement upon the Effect of Web-based Performance Appraisal on Work Relations and Teamwork (n=36)

	Strong agree/ agree		Uncertain		Strong disagree/ disagree		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Improve relationship with supervisor	30	83.3	6	16.7	0	0.0	4.1	0.6	4.0	4.0	4.3
Improve relationship with colleagues	27	75.0	9	25.0	0	0.0	4.0	0.7	4.0	3.8	4.3
Enhance teamwork	28	77.8	6	16.7	2	5.6	4.0	0.9	4.0	4.0	5.0
Mitigate conflicts between staff	22	61.1	12	33.3	2	5.6	3.7	0.9	4.0	3.0	4.0

Table 4. Respondents’ Agreement upon the Effect of Web-based Performance Appraisal on Empowerment (n=36)

	Strong agree/ agree		Uncertain		Strong disagree/ disagree		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Increase encouragement of good performance	31	86.1	5	13.9	0	0.0	4.3	0.7	4.0	4.0	5.0
Help me to achieve the desired goals of my work	28	77.8	7	19.4	1	2.8	4.2	0.8	4.0	4.0	5.0
Encourage independence	29	80.6	6	16.7	1	2.8	4.1	0.9	4.0	4.0	5.0
Ensure that my job is within the scope of my abilities	26	72.2	8	22.2	2	5.6	3.9	0.9	4.0	3.0	5.0

Table 4 points to high percentages of agreement upon all items of the effect of web-based application on empowerment. These ranged between 72.2% for the item of ensuring that job is within the scope of abilities and 86.1% for the item of increasing

encouragement for a good performance. The median of all items was four – meaning “agree.”

With regard to the effect of web-based performance appraisal on evaluation, Table 5 illustrates generally high agreement, with all items showing a median of four corresponding to “agree.” The highest agreement was upon ensuring fair performance evaluation (83.3%) while the lowest was upon ensuring appreciation of creative thinking (72.2%).

Table 5. Respondents’ Agreement upon the Effect of Web-based Performance Appraisal on Evaluation (n=36)

	Strong agree/ agree		Uncertain		Strong disagree/ disagree		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Ensure fair performance evaluation	30	83.3	6	16.7	0	0.0	4.1	0.7	4.0	4.0	5.0
Make incentive consistent with performance	27	75.0	8	22.2	1	2.8	4.0	0.8	4.0	3.8	5.0
Encourage reward for excellence work	28	77.8	8	22.2	0	0.0	4.1	0.7	4.0	4.0	5.0
Ensure appreciation of creative thinking	26	72.2	9	25.0	1	2.8	3.9	0.8	4.0	3.0	4.3

Table 6 demonstrates generally low percentages of agreement upon the factors relating to the impact of a web-based performance appraisal. Except for the item of increasing productivity, which was agreed upon by 80.6% of the respondents, the agreement upon all the other items was low, down to 44.4% for the item of decreasing staff burnout. The median for this item, as well as the item stating decreasing staff turnover was three, which corresponded to “uncertain.”

Table 6. Respondents’ Agreement upon the Effect of Web-based Performance Appraisal Impact (n=36)

	Strong agree/ agree		Uncertain		Strong disagree/ disagree		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Increase productivity	29	80.6	6	16.7	1	2.8	4.2	0.8	4.0	4.0	5.0
Increase job satisfaction	21	58.3	13	36.1	2	5.6	3.8	0.9	4.0	3.0	4.3
Decrease staff burnout	16	44.4	18	50.0	2	5.6	3.6	0.9	3.0	3.0	4.0
Decrease staff turnover	17	47.2	18	50.0	1	2.8	3.6	0.8	3.0	3.0	4.0
Foster the reputation of the organization	20	55.6	13	36.1	3	8.3	3.7	0.9	4.0	3.0	4.0

Table 7. Respondents' Total Agreement upon Effect of Web-based Performance Appraisal (n=36)

	Strong agree/ agree		Uncertain		Strong disagree/ disagree		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Work relations and teamwork	32	88.9	3	8.3	1	2.8	4.0	0.6	4.0	3.7	4.3
Empowerment	29	80.6	7	19.4	0	0.0	4.1	0.7	4.3	3.8	4.6
Evaluation	27	75.0	9	25.0	0	0.0	4.1	0.6	4.0	3.7	4.5
Impact	17	47.2	19	52.8	0	0.0	3.7	0.8	3.5	3.0	4.1
Total opinion	29	80.6	7	19.4	0	0.0	4.0	0.6	3.8	3.7	4.3

Overall, Table 7 illustrates generally high percentages of agreement upon the domains of work relations, empowerment, and evaluation, with work relations having the highest percentage (88.9%). Conversely, only 47.2% of the respondents expressed their agreement upon the domain of impact. However, in total, 80.6% of the respondents agreed upon the effect of the web-based performance appraisal application, with a median of 3.8, i.e. approaching "agree."

According to Table 8, 77.8% expressed their high or fair willingness to use a web-based application for performance appraisal if implemented. On the other hand, only one participant (2.8%) had a low or refusing attitude.

Table 8. Respondents' Attitude Towards Willingness to Use a Web-based Performance Appraisal Application (n=36)

	High/ Fair		Uncertain		Low/ Refuse		Score (max=5)				
	No.	%	No.	%	No.	%	Mean	SD	Median	Quartiles	
										1st	3rd
Acceptability of a new web-based performance appraisal system	28	77.8	7	19.4	1	2.8	4.1	0.8	4.0	4.0	5.0

Table 9 demonstrates the lack of any association of statistical significance between respondents' opinions regarding the effect of web-based performance appraisal and any of their personal characteristics, including their computer and internet skills, as well as their previous experience with such applications.

Table 9. Relation between Respondents' Agreement upon the Effects a Web-based Performance Appraisal Application and their Personal Characteristics

	Score of total opinion		t-test	p-value
	Mean	Standard deviation		

Gender				
Male	4.0	0.6		
Female	3.9	0.5	.081	.936
Highest qualification				
Bachelor	3.9	0.5		
Master/doctorate	4.0	0.6	-.328	.749
Previously used a web-based performance application				
No	3.8	0.7		
Yes	4.0	0.5	-1.129	.274
Computer skills				
Low/average	4.0	0.5		
High	3.8	0.6	1.129	.268
Internet skills				
Low/average	4.0	0.6		
High	3.9	0.6	.817	.422

Table 10. Correlation between Respondents' Scores of Agreement upon the Effects a Web-based Performance Appraisal Application and their Attitude

	Spearman rank correlation	
	Scores of	
	<i>Total opinion</i>	<i>Accept use of web system</i>
Total opinion		.413*

As regards the correlation between respondents' scores of the effect of web-based performance appraisal and their willingness to use such a system, Table 10 demonstrated a moderate positive statistically significant correlation ($r=0.413$).

Table 11 illustrates respondents' opinions regarding the barriers to implementation of web-based performance appraisal applications. It shows that technical problems came top of the list (11.1%) followed by fairness, comprehensiveness, accuracy and reliability, and confidentiality 8.3% each, and then staff adaptation and how to manage change (5.6%).

Table 11. Respondents Open Question Responses Regarding Barriers and Suggestions

	No.	%
Technical problems, not accessible, cost	4	11.1
Unfair appraisals	3	8.3
Performance that cannot be measured (comprehensiveness)	3	8.3
Accuracy, reliability	3	8.3
Confidentiality	3	8.3
Staff adaptation and how to manage change	2	5.6
Ambiguity of performance criteria	1	2.8

Biased performance criteria	1	2.8
Complexity	1	2.8
Less communication between management and employees	1	2.8
Stress regarding better performance	1	2.8
How to motivate employees to accept the new system	1	2.8
How to manage conflict regarding performance that cannot be measured	1	2.8
Work overload	1	2.8
Feedback	1	2.8

5. Discussion

The aim of this study was to explore workers' opinions regarding the impact of web-based performance appraisal on various aspects of work. The results indicate generally high agreement upon the positive effects on all aspects, with the lowest agreement upon the impact on burnout and turnover. The personal characteristics of the respondents, as well as their skills in computer and internet, did not have any association with their agreement or their attitude towards the use of the application.

The study sample included a heterogeneous group including males and females with various qualifications and a wide range of age and experience years. They also had a variety of computer and internet abilities. This variability may give more credibility to the results of the study, since the sample represents the whole gamut of a workforce that provides a variety of opinions regarding the impact of web-based performance appraisal applications.

According to the present study findings, a high percentage of the respondents (exceeding four-fifths of the sample) agreed upon the positive effects of web-based performance appraisal applications. This, along with the high percentage of willingness to use such applications, indicates that the implementation of web-based systems for performance appraisal is feasible and acceptable. A similarly high agreement upon online performance appraisal was reported by Boiselle et al in their study on the evaluation of an online faculty appraisal instrument: comparison of resident and faculty perceptions in the USA [26].

Nonetheless, despite the high percentages of agreement upon the domains of work relations, empowerment, and evaluation, there was a lower percentage of agreement upon the domain of impact, where less than half of the respondents expressed their agreement. This might be explained by the fact that the impact items convey far-reaching objectives such as decreasing staff burnout and turnover and increasing job satisfaction and fostering the reputation of the organization. Another reason could be that such impacts are influenced by other factors in the workplace, as well as by the employees themselves, so that performance appraisal only represents one of these factors.

As regards the effect of the web-based performance appraisal on work relations and team work, the highest agreement was upon improving the relations with supervisors, while mitigating conflicts between staff was the lowest. This might be attributed to the fact that performance appraisal systems are a matter between the employee and his/her supervisors, and do not tend to have a direct correlation with peers. Although the system may ensure fair evaluation of employees, which may decrease conflicts related to performance appraisal among them, this is perceived less by them when compared with the direct effect on subordinate-supervisor relationships.

An important finding of the present study is the high agreement of the respondents upon the effect of web-based applications on empowerment. This empowerment is in the form of encouraging autonomy and increasing confidence in own abilities to perform work and achieve the goals of the organization. These feelings would certainly have a positive impact on performance as well as job commitment. In congruence with this, a study in the UK reported that a lack of empowerment was a key problem underlying ineffective current appraisal systems, with a lack of valid performance. Thus, engagement with managers in design and implementation of performance appraisal systems is essential [27].

Concerning evaluation, which is the main goal of the web-based performance appraisal application, the current study demonstrated high agreement upon all items, especially the point related to ensuring fair performance evaluation. In fact, fairness is one of the critical issues in performance appraisal, and a system that ensures it would certainly have a strong positive impact on employees, and consequently on the organization. In this context, Wang et al. (2010), in a study in Hong Kong, mentioned that raters with different goals will give different ratings with different views of fairness. Thus, raters inflated their peer ratings with the aims of fairness and motivation, while non-peer raters deflated ratings for high performers to achieve fairness. In a web-based application, these discrepancies may be minimized.

The present study also demonstrated that the majority of respondents agreed upon the positive impact of web-based performance appraisal on increasing productivity. This may be attributed to the feeling by employees that they have active participation in the process of performance appraisal, rather than being passive recipients. This would help them to pinpoint their weak aspects in performance and set plans to improve, thus leading to more productivity. In agreement with this, Awases et al., in Namibia, found that the lack of an effective performance appraisal system was an important factor underlying low productivity of nurses [28].

According to the current study findings, more than three-quarters of the respondents conveyed their willingness to use a web-based application for performance appraisal if implemented. This high percentage of positive attitudes towards the application indicates the feasibility of its implementation. This is quite important since the success of such applications lie in their proper utilization. This may be the only influencing factor since the present study results indicated that none of the respondents' personal characteristics, or experience or skills in computer or internet use, had a significant relation with their agreement upon or acceptability of the web-based performance appraisal application. A similarly high percentage of positive attitudes towards utilization of web-based applications were reported in Indonesia by Tenges [19].

6. Conclusion

The study findings demonstrate that the implementation of a web-based performance appraisal application is feasible and acceptable, regardless of employees' personal characteristics, skills, or experience. However, barriers to implementation, such as technical problems, lack of fairness, comprehensiveness, accuracy and reliability, and confidentiality should be taken into account. Nevertheless, the small sample size is a limitation of the study. Further research – with a larger sample size – is recommended to enrich the Saudi business intelligence scientific publication.

The post-implementation EPMS satisfaction survey will be the driver for updating systems in the future.

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