Factors Affecting Employees' Portal Satisfaction in Jordanian National Electric Power Company

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Abstract

This research aims to understand the factors affecting the users' satisfaction of employees' portal. The theoretical framework is based on DeLone and McLean (2003) IS success model which is widely used in the information system research. The research model includes five factors; net benefits (Perceived employees' performance), system quality, information quality, service quality and user characteristics. The quantitative research was used and questionnaire was distributed to Jordanian National Electric Power Company (NEPCO). 312 questionnaires were collected and statistically analyzed to test the developed hypotheses. Results revealed that gender and age did not have ant statistical significant effect on portal users' satisfaction. Education and job category have statistical significant effect on portal users' satisfaction. In addition, the results revealed that net benefits, system quality, information quality and service quality have statistical significant effect on portal users' satisfaction.

Keywords: user satisfaction, employee portal, net benefits, system quality, information quality, service quality, user characteristics.

1. Introduction

In line with the increased usage of Information Technology (IT), especially with universality of internet, many have tried to exploit these new technologies. These technologies have changed the way services are delivered. Portals are one of the important advancements in the digital age. Portals as a type of information systems (IS) act as a single point of access to information and services that are related to employee's work and personal interests (Granic, Metrovic, & Marangunic, 2011). Time, cost, complexity, and high failure risk factors are usually related to portal projects (Remus, 2007). Large number of companies does not evaluate the success of their portal (Urbach, Smolnik & Riempp, 2010). The success of portal is depending on the degree of employees' satisfaction because if they are not satisfied with the portal services they will not use it (Al-Debei, Jalal, & Al-Lozi, 2013). Hence, there is no adopt that portal considered an important tool in modern organizations, Jordanian National Electric Power Company (NEPCO) was one from other companies that implemented employee portal. The purpose of this study is to gain better understanding of the determinants of user satisfaction in the context of employee portal by assessing employee satisfaction of the portal and identifying the factors that influence employees' satisfaction with the portal.

1.1. Research Problem

Using pilot unstructured interviews with NEPCO Human Resource department manager, a notable that there are some employees still asking the HR department about the information which is available on portal by calling or coming to HR office and sometimes the employees cannot access the portal because the system is breakdown. Due to that, it is necessary to ensure that the portal are meeting the objectives for which it is established by evaluating the users' satisfaction.

1.2. Research Questions and Objectives

The main goal of this study is to evaluate the users' satisfaction of employee portal from the perspective of employees as users of the system. To achieve this goal, the following objectives were proposed:

1- Identify the factors that can be used to evaluate users' satisfaction of employee portal.
2- Determine the effect of net benefit, system quality, information quality, service quality and user characteristics on users' satisfaction.

Based on above research objectives, this research seeks to answer the following research questions.

1- Which factors can be used to evaluate users' satisfaction of employee portal?
2- What is the effect of net benefit, system quality, information quality, service quality, and user characteristics on users' satisfaction?

2. Literature Review and Theoretical Framework

2.1 Overview of Portal

Portals as an information system play important role in the organizations by sharing and transferring information and knowledge. They support employees' decision making and practices. Employees' portal can be defined as an application that supports organizations in delivering information, knowledge and services to their distributed

employees in order to achieve employees' needs and to strengthen the communication and collaboration between employees themselves and between employees and the organization (Kassim & Bany Mohammed, 2013; Urbach, Smolnik & Riempp, 2010; Masrek & Gaskin, 2015). Portals integrate the business applications and processes (Chan & Liu, 2007). Other definition of portal is "single point of access for the pooling, organizing, interacting, and distributing of organizational knowledge" (Al-Debei, Jalal, & Al-Lozi, 2013). The implementation of portal is helpful in achieving the organizational effectiveness (Masrek, 2007). Portals are used to improve the business process by enhance the information exchange and employee communication and collaboration (Urbach, Smolnik & Riempp, 2010). Portals can reduce information overload, enhancing the company communications, and support employee productivity (Sugianto & Tojib, 2006). In summary, employee portal is a website that provides employees with necessary information and services anytime and anywhere.

2.2 User Satisfaction
User satisfaction is an important factor for measuring the IS success, it represents the user's perception of system quality and information quality that can generated from the system (McGill, Hobbs & Klobas, 2003). Al-Marashdeh, Sahari, Zin, and Al-Smadi (2010) defined User Satisfaction as the overall evaluation of user's experience in using a system and the potential impact of the system; it is related to user perception and attitudes towards the use of the system. Zaied (2012) defined satisfaction as "An overall affective response to a perceived discrepancy between prior expectations and perceived performance after consumption (p.817)".

2.3 NEPCO Employee Portal
NEPCO has implemented its own employee portal since 2010. NEPCO employees can access information and services by their own username and password. NEPCO employee portal available in Arabic language only and provide employee with user's manual. It consists of six main pages; employee corner, employee card, health insurance, electronic guide, surveys, and employee suggestions. Each page provides employee with different information and services. Employee corner contains the personal information of the employees such as name and phone number. Employee card page contains the payroll information, daily attendance, leaves, and employee's funds. health insurance page includes information about the certified medical network and the rules and regulations of health insurance. Electronic guide includes all information about employees phone number, job name, work place; also include the company rules and regulations. Surveys page allows employees to vote on any matter in the company. Suggestions page allows employees to send any suggestions and questions.

2.4 Theoretical Framework
The theoretical framework that guided this study is Delone and McLean (2003) IS success model. In an attempt to create a model that defines IS success, DeLone and McLean (1992) reviewed different IS success definitions and the measures related to these definitions. DeLone and McLean used six categories to classified the measures of IS success and then developed a model for measuring the success of IS. The model was based on Rechard Mason's (1978) modification of Shannon and Weaver's (1949) mathematical theory of communications. The model assumes that the system has characteristics that have an effect on the system itself and the information generated by the system. The user will use the system and the use of the system will be satisfactory or unsatisfactory, which affects individual performance. The individual performance collectively results in organizational impacts. Figure (1) shows DeLone and McLean (1992) IS success model.
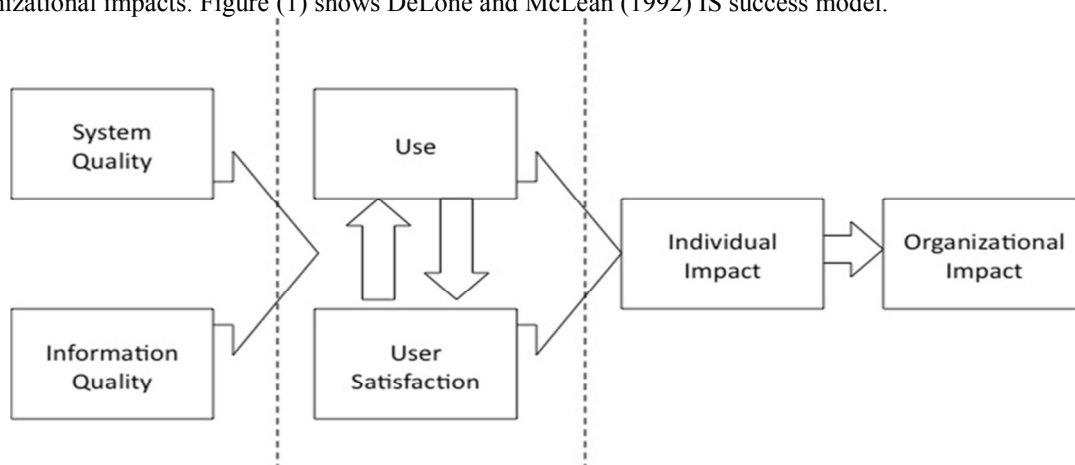

Figure1. DeLone and McLean (1992) IS Success Model

In 2003 DeLone and McLean updated their first model. The updated model used six dimensions for IS success (information quality, system quality, service quality, (intention to) use, user satisfaction, and net

benefits). The updated model can be explained as follows: information quality, system quality and service quality constructs were used to evaluate the system and these constructs affect the system use and user satisfaction. Particular benefits can be achieved through the system use and user satisfaction and these net benefits can be positively or negatively affect the system use and user satisfaction. Figure (2) shows DeLone and McLean (2003) IS success model.
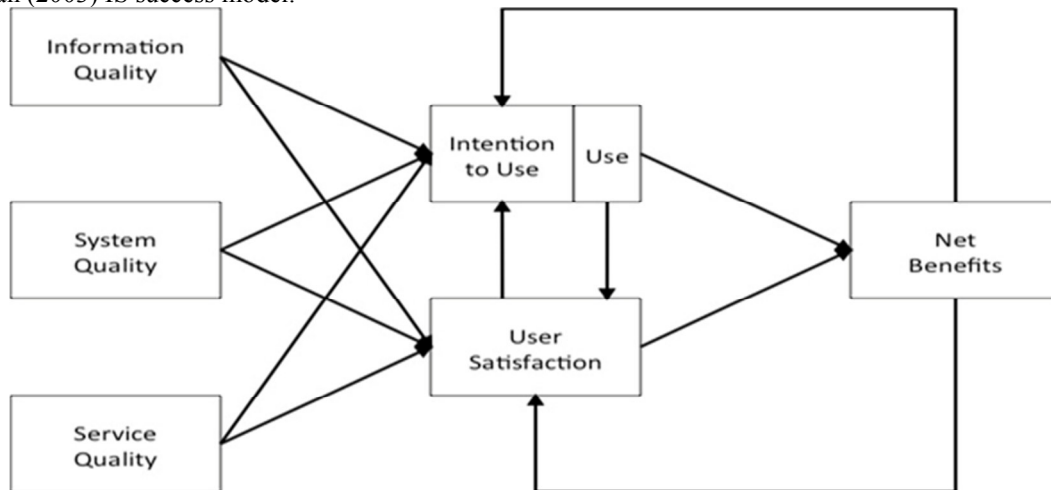

Figure 2.DeLone and McLean (2003) IS Success Model

3. Research Model and Hypotheses

This research mainly utilizes the Delone and Mclean (2003) IS success model as a foundational theoretical base for examining the employee's satisfaction of portal. This is because it has proved its validity for examining the success of different information systems in different contexts (Petter & Mclean, 2009; Gable, Sedera, and Chan, 2008; Petter, DeLone & McLean, 2008). Net benefit, system quality, information quality, service quality and user satisfaction constructs will be used in this research on the basis of the main functions and features of portals. User characteristics such as (age, education, gender, job categories) construct will be added to the model, since it is stressed as key factors that influence the use of portal (Rahim and singh, 2008) and affect the satisfaction of using portal (Tojib, Sugianto, and Sendjaya, 2008).

3.1 Net Benefits (Perceived employees' performance)

Perceived employees' performance as the measure of net benefit has a significant relationship with users' satisfaction (Al-Debei, Jalal, & Al-Lozi, 2013). The net benefit measures in this study are: employee portal improves employees' work quality, employee portal helps employees in decision making, employee portal improves employees' job information and knowledge, employee portal helps employees to find new ways to improve their job performance, employee portal helps employees to complete their work with minimal time and effort. Empirical results have shown a strong association between portal net benefits and users' satisfaction (Hsieh & Wang, 2007; Chen, 2009). therefore; it will be assumed here that:
H1: There is a positive relationship between net benefits and users' satisfaction of employee portal.

3.2 System Quality

The system quality represents the information processing quality, the functions and features of the system, and the software is easy to use and flexible (Gorla, Somers, and Wong, 2010). Petter, DeLone, and McLean (2008) defined system quality as "The desirable characteristics of an information system". The quality of the system is related to the quality of hardware and software which responsible for collecting, manipulating, storing and retrieving data and information. Seddon (1997) used many measures for system quality: bugs in the system, consistency, system is easy to use, quality of documentation and the flexibility of program code. DeLone and McLean (2003) measured system quality by attributes such as: ease of use, functionality, reliability, data quality, flexibility, and integration. Attributes of system quality can be measured from two perspectives: system developer perspective and end user perspective; system flexibility dimension that reflects the perspective of the system developer, and system sophistication dimension that reflects the view of the end user and denotes a user-friendly system (Gorla, Somers, & Wong, 2010). The system quality measures in this study are Ease to Use, Reliability, Flexibility, Accessibility, Searchability, and Interaction.

At the individual unit of analysis, there is strong support for the relationship between system quality and user satisfaction (Iivari, 2005). For knowledge management systems, system quality was also found to be strongly related to user satisfaction (Wu & Wang, 2006). Other research supported this relationship (Wang, 2008;

Al-Marashdeh, Sahari, Zin & Al-Smadi, 2010; Sharkey, Scott & Acton, 2010; Nasiri & Farahbod, 2012). Therefore, this study assumes that higher system quality leads to user satisfaction.
H2: There is a positive relationship between system quality and users' satisfaction of employee portal.

3.3 Information Quality
Petter, DeLone, and McLean (2008) defined Information quality as "the desirable characteristics of an information system outputs (p. 239)". Delone and McLean (1992) measured "Information quality" using five measures: accuracy, timeliness, completeness, relevance, and consistency. Wang and Strong (1996) divided the measures of information quality into four categories that are: (1) intrinsic information quality measured by: accuracy, believability, reputation, and objectivity, (2) contextual information quality measured by: value-added, relevance, completeness, timeliness, and appropriate amount, (3) representational information quality measured by: understandability, interpretability, concise representation, and consistent representation, (4) accessibility information quality measured by: accessibility, ease of operations, and security. Zaied (2012) used five dimensions for information quality: completeness, understandability, security, availability, and accuracy. The information quality measures in this study are Accuracy, Consistency, Reliable, Objective and believable, Useful and helpful to user to make informed decisions, Up to date, Understandable and clear, Secure. The relationship between information quality and user satisfaction is strongly supported in the literature (Iivari, 2005; Wang, 2008; Sharkey, Scott & Acton, 2010; Al- Marashdeh, Sahari, Zin & Al-Smadi, 2010; Nasiri & Farahbod, 2012). Thus; it is assumed here that higher information quality leads to higher users' satisfaction.
H3: There is a positive relationship between information quality and users' satisfaction of employee portal.

3.4 Service Quality
In the context of e-shopping, Zeithaml (2002) first introduced the concept of electronic service quality (e-SQ), stating that service quality on the Internet is "the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services". "Service quality" deals with the competency of IT staff, their responsiveness to deal with problems associated with the system, and also the attitude and degree of professionalism by which problems are resolved (Prybutok, Zhang, and Ryan, 2008).

The (SERVQUAL) instrument consists of 22-items to measure customer perceptions of service quality in service and retailing organizations. The instrument consists of five constructs (tangibles, reliability, responsiveness, assurance, and empathy). Many researchers have used the measures of the SERVQUAL instrument to measure service quality; Delone and McLean (2003) have measured "Service quality" construct in E-commerce success using assurance, empathy, and responsiveness dimensions. The service quality measures in this study are: (Reliability, Responsiveness, Communications, Empathy, Attitude/Commitment to user involvement, and Competence. Thus; it is assumed here that higher service quality leads to higher users' satisfaction.
H4: There is a positive relationship between service quality and users' satisfaction of employee portal.

3.5 User characteristics
User characteristics considered as key factors that affects human computer interaction (Mohammed & Alkubise, 2012). Urbach (2010) used gender in his study and found that gender has a significant effect on male employee's use of employee portal. Rahim (2008) found that young employee's use of employee portal have more usage rates. Age and job categories affect the employee's satisfaction of employee portal (Tojib, Sugianto, and Sendjaya, 2008). Higher qualifications employees have more usage rates of employee portal (Rahim, Quaddus, & Singh, 2009). The User characteristics of this study are: age, education, gender, job category. Thus; it is assumed here that user characteristics affect the users' satisfaction.
H5: There is a positive relationship between user characteristics and users' satisfaction of employee portal.
The model used in this research for assessing the factors affecting the satisfaction of employee portal is shown in figure (3) below.
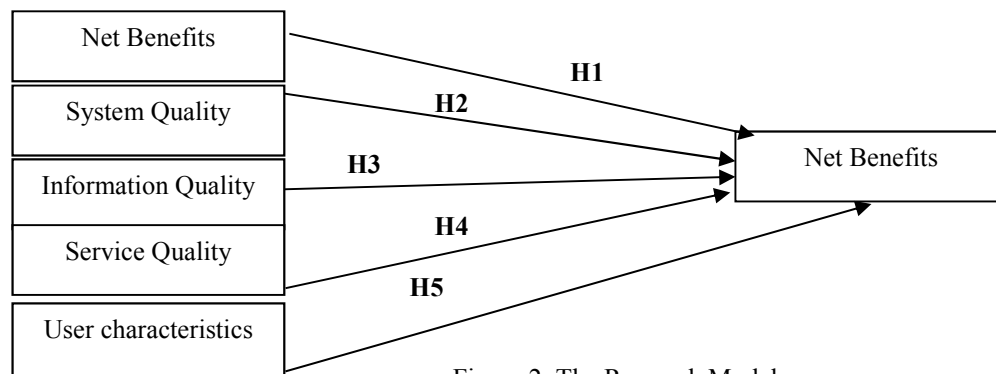
Figure 2. The Research Model

4. Methodology

The approach adopted in this study was the quantitative method and the survey questionnaire is used in this study. The survey questionnaire is the most commonly used method of gathering information about the research problem. Questionnaires have the advantage of obtaining data more efficiently in terms of time, energy and costs (Sekaran, 2003). survey questionnaire was developed as the evaluation tool for this research. The items of the questionnaire were selected from questionnaires in the previous researches. Then the questionnaires were distributed to respondents for data collection. Data collected were analyzed and findings were discussed.

5. Population and Sampling

The population of this study includes the employees of NEPCO. The total number of the employees is 1377 (1190 males and 187 females) distributed on four job categories; the first one is the top management category (A) and includes 40 managers, the second is the specialized jobs category (B) and includes 432 employees, the third one is the technical and administrative jobs category (C) and includes 686 employees, and the fourth one is the support services jobs category (D) and includes 223 employees. Based on the HR manager recommendation, the top management category is excluded and was not included in the study. Therefore, the number of the population will be 1337.

According to krejcie and morgan (1970), if the population consist of 1300 to 1400 respondents, the appropriate sample size is between 297 and 302. A total of 380 questionnaires were distributed, 324 questionnaires were returned and the response rate of distribution was 85%. Out of the 324 questionnaires, 12 were eliminated as incomplete because the respondents did not answer some questions and were considered invalid. This made the total number of usable questionnaires 312 (82%) and 68 (18%) out of 380 questionnaires were incomplete or not returned. The sample characteristics are shown in table (1) below.

Table1. User Characteristics and Demographics'

Measure	Item	Frequency	Percentage
Gender	Male	230	73.7
	Female	82	26.3
	Total	312	100%
Age	18-24	4	1.3
	25-34	79	25.3
	35-44	153	49.0
	45-54	72	23.1
	55-65	4	1.3
	Total	312	100%
Education	PhD	0	0%
	Masters	15	4.8
	Bachelor	157	50.3
	Diploma	75	24.0
	High school	45	14.4
	Less than high school	20	6.4
	Total	312	100%
Job Category	Specialized jobs (B)	127	40.7
	Technical and administrative jobs (C)	134	42.9
	Support services jobs (D)	51	16.3
	Total	312	100%

6. Validity and Reliability

6.1 Validity

The content validity of the questionnaire used in this study was tested by checking the relevance and appropriateness of the research instrument with academic reviewers from the faculty of business, faculty of science, and faculty of information technology at AL-Balqa Applied University in order to assure content validity, the comments of these professors were taken into consideration when the survey questionnaire was developed in its final version.

6.2 Reliability

Reliability is assessed in terms of Cronbach's alpha coefficient. A scale is considered reliable if the alpha coefficient is greater than 0.70 (Sekaran, 2005). In the case of this research, the reliability for all questionnaire items was satisfactory as values for Cronbach's alpha were above 0.812 and the overall reliability level was equal to .920.

7. Hypotheses Testing

Three types of analysis were used to test the study hypotheses. For hypotheses one to four, Linear Regression Analysis was used to test the effect of net benefit, system quality, information quality, and service quality on users' satisfaction. The results of regression analysis are shown in table (2).

Table 2. Results of Regression Analysis

Dependent Variable	Independent Variables	R2	Adjusted R2	Beta (β)	Sig.	Supported Hypotheses
Users' Satisfaction	Net Benefit	.669	.664	.215	0.000	H1: Supp.
	System Quality	.559	.558	.297	0.000	H2: Supp.
	Information Quality	.615	.613	.223	0.000	H3: Supp.
	Service Quality	.652	.649	.193	0.000	H4: Supp.

Results in table (2) above show that net benefit (β = .215, p<0.001) explains 66.9% of the variance in users' satisfaction which mean that there is a significant effect of net benefit on users' satisfaction. This result agrees with some earlier studies such as (DeLone & McLean, 2003; Bharati & Chaudhury, 2006; Hsieh & Wang, 2007; Al-Debei, Jalal, & Al-Lozi, 2013). system quality (β = .297, p<0.001) explains 55.9% of the variance in users' satisfaction which mean that there is a significant effect of system quality on users' satisfaction. This result agrees with some earlier studies such as (Sharkey, Scott and Acton, 2010; Lee & Lee, 2012; Nasiri & Farahbod, 2012).

Information quality (β = .223, p<0.001) explains 61.5% of the variance in users' satisfaction which mean that there is a significant effect of information quality on users' satisfaction. This result agrees with some earlier studies such as (Iivari, 2005; Wang, 2008; Sharkey, Scott and Acton, 2010; Al-Marashdeh, Sahari, Zin and Al-Smadi, 2010). Service quality (β = .193, p<0.001) explains 65.2% of the variance in users' satisfaction which mean that there is a significant effect of service quality on users' satisfaction. This result agrees with some earlier studies such as (Jiang, Klein, Parolia, & Li, 2012, Urbach, Smolnik, & Riempp, 2010; Jing & Seon, 2013; Jang, 2010).

The fifth hypothesis "There is a positive relationship between user characteristics and users' satisfaction of employee portal" was divided into four sub-hypotheses (gender, age, education and job category). For the first sub-hypothesis "gender has significant effect on portal users' satisfaction" independent sample T test was used. As illustrated in table (3) below, results show that there are no significant differences by user's gender on portal users' satisfaction. This result agrees with some earlier studies such as (Kassim & Bany Mohammed, 2013; Zviran, Pliskin, & Levin, 2005).

Table3. Results of Independent Sample T Test

	T	DF	Sig. (2-tailed)
Differences of gender	.162	310	.872

For sub-hypotheses two, three and four "age has significant effect on portal users' satisfaction" , "education has significant effect on portal users' satisfaction" , "job category has significant effect on portal users' satisfaction" one way ANOVA test was used. As illustrated in table (4) below, results show that there are no significant differences by user's age on portal users' satisfaction. This result agrees with some earlier studies such (Al-Gahtani, 2004; Zviran, Pliskin, & Levin, 2005). Results show that there are significant differences by user's education on portal users' satisfaction. This result agrees with some earlier studies such (Rahim, Quaddus, & Singh, 2009; Lai & Chen, 2009). Results show that there are significant differences by job categories on portal users' satisfaction. This result agrees with (Tojib, Sugianto, and Sendjaya, 2008).

Table 4. Results of One Way ANOVA Test

	F	Sig.
Differences of age	1.279	.278
Differences of education	2.825	.025
Differences of job category	4.996	.007

* the impact is significant at level ($\alpha \leq 0.05$)

8. Results Discussion and Recommendations

Net benefit, system quality, information quality and service quality have a significant effect on portal users' satisfaction. Employees' portal helps employees to make decisions as a measure of net benefit construct showed the higher effect on users' satisfaction. In the system quality construct, the "portal easy to use" item showed the higher effect on users' satisfaction which means that employees looking for easy interfaces that enable them to search and access information and services more easily. For information quality, the accuracy of information showed the higher effect on users' satisfaction. This result appears to be rational since most of portal information deals with salaries, vacations, leaves, personal information and management decisions. Responsiveness of IT stuff as a service quality measure showed the higher effect on users' satisfaction. Users will be satisfied if they receive quick support and assistance from the IT stuff and without delay.

Results show that gender and age have no effect on portal users' satisfaction. These results can be understood since most employees age is between 25 and 44 and most of respondents are male. Results show that education and job category affect portal users' satisfaction. 21% of respondents are high school or less the high school and related to support services jobs , 24% are diploma and related to technical and administrative jobs, and 55% are bachelor and master degree and related to specialized jobs. These results appear to be rational since each group may use portal in different ways and for different reasons according to their jobs and education. Based on the research results, the following recommendations are suggested:

1. NEPCO needs to take into consideration the educational differences between employees and focus on meeting the needs of employees according to their job category.
2. NEPCO needs to focus on ease of use and the accessibility to the employees' portal and provide the necessary tools to communicate between employees in order to help in complete their work.
3. NEPCO has to update the information continuously and provide accurate information that can be reliable for employees.
4. Finally, IT stuff support is very important for portal employees' satisfaction. Therefore, IS stuff need to provide dependable quality services at the due date and responds to employees' requests and answers their inquiries promptly.

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