

# How Consultant Participation Lead to ERP Implementation Satisfaction: A study Upon the Iranian Industries

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## Abstract

Due to high levels of investment required in the implementation of an Enterprise Resource Planning (ERP) system and considerable differences in ERP adoption results, substantial research attention has been devoted to exploring critical success factors (CSFs) concerning ERP implementation. Little attention, however, has been paid to the mechanisms of how these factors influence successful ERP implementation. This study focused on three CSFs, namely: consultant participation, user training, and IT staff skills. The authors developed a research model including the relationships between the aforementioned CSF variables and ERP implementation success variable, namely ERP implementation satisfaction. The purpose of this research was to explore the direct effect of consultant participation on ERP implementation success (satisfaction) and examines the indirect effect of that via user training, and IT staff skills. Our research model was assessed using a sample of 249 ERP users in Iranian organizations. Partial least squares (PLS) technique was used for data analysis. The PLS results confirmed our six hypotheses. After integrating the results, we found that consultant participation positively influenced ERP implementation satisfaction either directly or indirectly through user training and IT staff skills.

**Keywords:** *Enterprise Resource Planning (ERP), ERP Implementation Satisfaction, Consultant Participation, User Training, IT Staff Skills.*

## 1. Introduction

Enterprise Resources Planning (ERP) systems are comprehensive packages designed to integrate a wide range of business functions to provide a holistic view of a firm from a single information technology architecture [1-3]. Organizations consider ERP systems as strategic resources for survival and to enhance competitive advantage [4-6]. In today's constantly changing business world, thousands of companies have implemented or have considered implementing an ERP system; however high failure rates of ERP implementations have been reported. The failure rate of ERP implementation ranges between 60% and 90% [7]. ERP implementation projects resulting in budget and time over runs average 178% and 230%, respectively [8, 9], and only 3.6% of such projects finish on schedule, within budget, and achieve their objectives [7]. These statistics indicate that ERP implementations are

costly, lengthy, and extensive system development projects.

As an ERP project requires high financial commitment and offers many potential benefits to an organization if successfully implemented, understanding the factors leading to a successful ERP implementation is necessary. Prior studies, in fact, have identified a variety of factors which influence ERP success or failure [8, 10, 11]. Much research attention has been dedicated to developed countries rather than developing countries. Hence, more research is needed regarding achieving successful ERP implementation in organizations operating in developing societies as developing societies face special problems which are different from those found in developed societies [9]. For example, one major problem is misalignment between the functions of ERP systems and an organization's requirements in developing countries because western vendors design most ERP systems based on their own requirements. So, the embedded processes in these systems reveal western processes [9]. This can lead to implementation failures of foreign ERP packages in organizations within developing countries [12].

Due to the dramatic increase in the adoption of ERP packages and the unique challenges for ERP implementation in developing countries [9], the subject of ERP CFFs in these societies receives most of the research attention. However, less consideration has been devoted to the mechanisms of how CSFs influence ERP implementation success. In the context of developing countries, Iranian organizations have tried to adopt ERP packages, but they confront crucial challenges and failures in ERP implementation [9]. Hence, it is worthwhile exploring how CSFs enhance the success (satisfaction) rate of an ERP implementation in organizations which are now in the process of adopting ERP packages, particularly Iranian organizations.

Previous ERP researches [13, 14] highlighted consultant support and user training as much needed CSFs for ERP implementation success. ERP consulting firms play an important role in ERP implementation because of the

integrative nature of ERP systems which makes their implementation complicated, and the lack of adequate internal resources for ERP implementation in adopting companies [15]. ERP consultants influence an ERP implementation process and outcome [16] by providing diverse services such as performing information requirements analysis, recommending suitable solutions to the clients, aligning organizational procedures with the system's modules, assisting in system configuration, offering specific knowledge of the software, mobilizing in-house resources and skills, and user training [17].

User training, which is one of the services provided by ERP consultants, is a critical component of a successful implementation strategy under conditions of high technical complexity [18]. Since ERPs are complex information systems [15, 17, 19], user training can act as a possible mediator of the relationship between consultant participation and ERP implementation success (satisfaction). To our knowledge, no empirical research has been conducted to examine the effect of consultant participation on ERP implementation satisfaction via user training.

Moreover, IT staff usually assist an organization to train users. ERP consultants can enhance IT staff skills thereby influencing end users' skills or knowledge. Current research suggests that the availability of IT staff with general IT skills is important because IT skills can form a solid foundation upon which more specific ERP related skills can be built [20]. For example, IT staffs who have IT knowledge or skills will be more readily received and are able to learn ERP related skills or knowledge from ERP consultants and then transfer such skills to users. In other words, knowledgeable IT staff can act as Knowledge Bridge between ERP consultants and ERP users [17]. That point motivated us to examine the mediating effect of IT staff skills between consultant participation and user training, an area which has received much less research attention.

Thus, this study aims to explore how consultant participation leads to ERP implementation satisfaction in ERP adopting organizations in Iran. More specifically, the purposes of this study were to: (1) examine the effects of consultant participation on user training, IT staff skills, and ERP implementation satisfaction, (2) examine user training as a mediator of the relation between consultant participation and ERP implementation satisfaction and (3) examine IT staff skills as a mediator of the relation between consultant participation and user training.

The rest of this paper is structured as follows: the next section provides a theoretical background and presents the research model. Section three explains the research

methodology. The fourth section presents data analysis and findings. In the last section, we present paper's discussion and conclusion, as well as implications of the study.

## 2. Theoretical Background and Research Model

Our research model and its hypotheses are shown in Figure 1. The research model proposes that consultant participation positively influences user training, IT staff skills, and ERP implementation satisfaction. In addition, user training mediates the relationship between consultant participation and ERP implementation satisfaction. Further, IT staff skills mediate the relationship between consultant participation and user training. The following sections provide details on the constructs in the research model and the proposed relationships between them.

### 2.1 ERP Implementation Satisfaction

Current literature indicates that ERP implementation success can be viewed from different perspectives including user satisfaction, system acceptance and use, individual impact, organizational impact, and implementation on time [7, 8, 21, 22] and that user satisfaction is the most common [7]. User satisfaction is regarded as the best surrogate measure of IS success [23] and also has been considered as the best measure of ERP implementation success by prior research [7, 8]. User satisfaction is a key factor in the information system (IS) and an example of this can be found in the DeLone and McLean IS success model as shown in Figure 2. DeLone and Mclean [24] reviewed 180 articles and developed a model which consists of the six dimensions of IS success, namely: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. The construct of the model which is adopted in the current study is user satisfaction. User satisfaction defines the receipt response to the use of an IS's output [24]. Also, Ives et al., [25] defines user satisfaction as the extent to which users believe that the available IS meets their information requirements. DeLone and Mclean [19] stated user satisfaction is the most widely used measure of IS success because of the following points: (1) high degree of face validity; (2) development of reliable tools to measure with, and conceptual weakness, and unavailability of other measures.

In this study, we aim to measure ERP implementation success from the perspective of user satisfaction. Hence, we place a construct, namely ERP implementation satisfaction, in our proposed research model as shown in Figure 1. A more in-depth understanding of the factors that

may affect ERP implementation satisfaction is a prerequisite in order to enhance the effective use of ERP systems and ERP implementation success in ERP adopting companies.

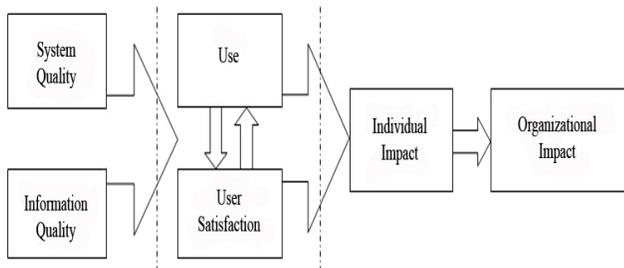


Fig. 2 Delone and Mclean's IS success model.

## 2.2 Consultant Participation: ERP Implementation Satisfaction

Because ERP implementation is extremely complex, companies rely on external expertise in the form of consulting firms that are professional and knowledgeable about the installation of software and hardware required of such an endeavor [17, 19, 26]. Consultants are valuable to ERP implementation because they provide a variety of services, including: performing information requirements analysis, recommending a best solution to clients, aligning organizational procedures with the system's modules, assisting in system configuration, offering specific knowledge of the software, mobilizing in-house resources and skills, and user training [17].

According to McGivern [27] and Lapiedra et al., [7], the quality of the client–consultant relationship is a critical factor in the realization of a project's goals. Wang and Chen [15] and Ford [28] argues that effective communication describes the extent to which users and consultants understand each other during the consulting process, which is a main component of a productive relationship. Through effective communication, details of existing client business practices are conveyed exactly and entirely by users to consultants. This enables consultants to propose the best solutions to clients and to translate the ERP requirements to the organization and process levels [7, 15, 29, 30]. Therefore, effective communication between consultants and clients improves the possibility of providing a system configuration that fits more closely with the client's requirements [7].

Wang and Chen [15] showed that consultant quality, which includes the extent of work, help, and support given by consultants, positively influences communication effectiveness and ERP system quality. In addition, Infinedo [17] examined the influence of external expertise

(ERP vendor and consultants) on ERP success and found consultants' expertise has a positive impact upon ERP system quality and ERP information quality. Therefore, we contend that ERP consultants positively contribute ERP implementation success. According to Delone and Mclean model, it can be expected that higher system quality leads to higher ERP satisfaction by users. When consultants help client (adopting organization) to have an ERP system with a high level of quality, users are more likely be satisfied with the system, and its implementation. In other words, consultants can enhance users' satisfaction with an ERP system and its implementation by delivering a high quality system. Thus, we hypothesize:

H1: Consultant participation positively influences ERP implementation satisfaction.

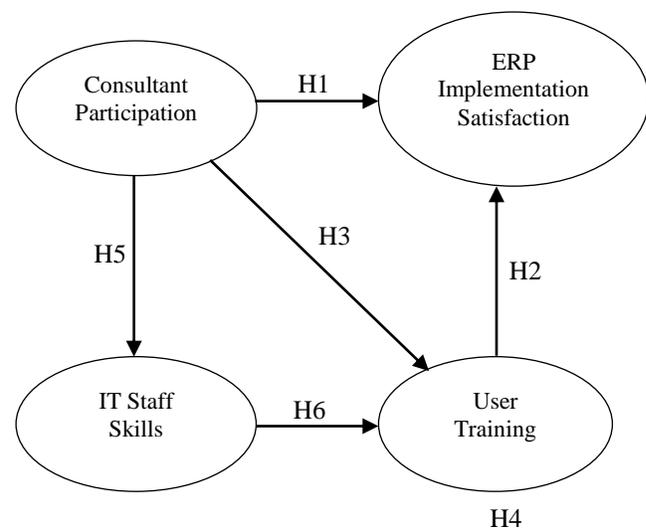


Fig. 1 The proposed research model.

## 2.3 User Training: ERP Implementation Satisfaction

Training refers to the process of providing logic and ERP system concepts for employees [8] and is recommended during pre-implementation, implementation and post implementation phases [31]. Training should be conducted with as much emphasis on the new processes which are generated [32]. This helps employees to increase their expertise and knowledge level, to understand of how their jobs are related to other functional areas inside the company [8], and allows the sharing of common problems [32].

Training is a source of knowledge and an organizational intervention contributes to the overall success of the implementation [33]. Training programs enable users to obtain three domains of knowledge, including: application knowledge, business context knowledge which covers the

use of IS to effectively perform business tasks, and collaborative task knowledge which covers how other users use IS in their tasks [34]. Acquired knowledge in these domains enables users to overcome knowledge barriers to implementation success [18]. Sharma and Yetton [18] have shown that under conditions of high technical complexity, training has a strong effect on application knowledge, business context knowledge, and ultimately on IS implementation success. Technical complexity is defined as the extent to which an IS innovation is hard to understand and use [35]. Technically complex IS innovations require users to work with unfamiliar technologies, and often requires them to perform their tasks in different ways [18]. Because ERP systems are complex information systems [15, 17, 19], training is a main factor in ERP implementation projects [32] and our contention is that it can positively influence a successful ERP implementation.

Since successful ERP implementation requires user acceptance [36], ERP researchers [32, 37] introduced user training into the technology acceptance model (TAM) based on two determinants, namely perceived usefulness, and perceived ease of use. They found user training directly influenced perceived ease of use and indirectly influenced perceived usefulness of an ERP system in a positive manner. Thus, user training can also contribute to ERP implementation satisfaction through its positive effects on ERP users' perceptions of usefulness and ease of use which in turn influencing behavioral intention and users satisfaction [38]. Therefore, we expect that a positive relationship exists between user training and ERP implementation satisfaction. Thus, we hypothesize:

H2: User training positively influences ERP implementation satisfaction.

### 2.3 Consultant Participation: User Training, IT Staffs' Skills, ERP Implementation Satisfaction

User training is one of the services provided by ERP consultants during ERP implementation projects [8, 15]. ERP consultants (trainers) with extra experience in ERP implementation can play a significant role in assisting employees to understand an ERP system [8]. Training that is available through the consultants is a valuable resource which contributes to expanding skills and increasing knowledge that are lacking in-house, resulting in enabling users to utilize an ERP system. When ERP users achieve appreciable knowledge of an ERP system and use an ERP system properly, they are likely to be able to appreciate the overall quality of the system and understand its capabilities. This can positively influence their satisfaction regarding ERP implementation.

Based on prior ERP studies, it can be assumed that consultant participation positively influences user training especially where the hired consultants are experienced and knowledgeable because inexperienced consultants or those with poor knowledge of an ERP system provide ineffective training [39]. We expect that experienced and knowledgeable consultants can deliver adequate training to users, enabling them to fully exploit an ERP system and increase users' satisfaction of its implementation. Adequate training in this study refers to a training that (1) is complete, (2) has adequate length and detail, (3) adds to users' understanding of an ERP system and substantially improve their level of understanding, (4) give users confidence in an ERP system. Hence, the role of consultants becomes more important as they can enhance the users' skill and knowledge in using the ERP through training sessions which enhance the chance that the implementation will be success (ERP implementation satisfaction). Thus, we hypothesize:

H3: Consultant participation positively influences user training.

H4: User training mediates the relationship between Consultant participation and ERP implementation satisfaction.

In adopting an ERP system, it is common to build a project team [1, 13, 40, 41] including top management, IT staff, and key end users [19]. In addition, ERP consultants who are expert, knowledgeable, reliable, and dependable should participate in the project [17]. Moreover, it is expected that organizational members possess some general IT skills to produce favorable outcomes with their ERP system [17]. Insufficient or lack of skills among organizational members leads to unsuccessful ERP implementations [17].

It was shown that internal IT expertise is important as knowledge is being transferred from external providers to the members of an organization [42, 43]. IT staff members who do not lack in IT knowledge are better able to receive ERP related skills or knowledge from ERP consultants, and can then act as knowledge bridge between ERP consultants and ERP users [17]. IT staff can assist users to understand potential IT benefits [44] and to assimilate new IT knowledge [20]. Also, IT staff can help train users by assisting them in acquiring, processing, managing, and controlling computer resources within an organization [20, 44, 45]. Therefore, we expect IT staff skills is a mediator variable between consultant participation and user training. Thus, we hypothesize:

H5: Consultant participation positively influences IT staff skills.

H6: IT staff skills mediate the relationship between Consultant participation and user training.

### 3. Research Methodology

#### 3.1 Sample

The study was carried out with ERP users from Iranian organizations that implemented ERP systems. For data collection from the organizations, we first visited the organizations and requested that executive managers participate in this study. Second, we delivered the survey questionnaires to executive managers who then distributed the questionnaires among ERP users. A total of 500 instruments were distributed. In the end, 276 questionnaires were returned, of which 249 were complete and valid for data analysis. Table 1 shows the demographic information of respondents.

#### 3.2 Survey Design

The questionnaire used for data collection involved five sections: consultant participation, user training, IT staff skills, ERP implementation satisfaction, and respondent demographic data. The 6-item scale in the consultant participation section and 3-item scale in IT staffs' skills section were based on Infindeo [17]. The items for these two sections were measured on a 5 point scale ranging from "strongly disagree" to "strongly agree" and "not skilled, at all" to "very skilled", respectively. The 5-item scale in user training section was adopted from Amoako-Gyampah and Salam [37] and items were measured using a 5 point scale ranging from "strongly disagree" to "strongly agree". The ERP implementation satisfaction scale was adopted from Somers et al., [46] with 12 items, and items were measured using a 5 point scale ranging from "almost never" to "almost always".

Table 1: Demographic information

<i>Measure</i>	<i>Categories</i>	<i>Frequency</i>	<i>Percent</i>
Gender	Male	157	63
	Female	92	37
Age	Below 30 years old	53	21.3
	Between 31-40 years	106	42.6
	41-50 years old	69	27.7
	Over 50 years old	21	8.4
Education	Diploma	77	30.9
	Undergraduate	118	47.4
	Postgraduate	54	21.7
Employment with the Company	Less than 5 years	42	16.9
	5-10 years	63	25.3
	More than 10 years	144	57.8

## 4. Data Analysis

The Structural Equation Modeling (SEM) technique was used to validate the research model. Partial Least Squares (PLS) was applied for data analysis. PLS models and validates predictive models [47] and is widely employed for empirically-based studies; Smart PLS 2.0 was used for analysis. Data analysis was conducted in two phases. First, validity of the measurements was tested using confirmatory factor analysis. Second, an analysis of the structural equation model was conducted to test our hypotheses (the relations in the research model).

### 4.1 Reliability and Validity of Measurement Items

Internal consistency, convergent validity and discriminant validity was tested to assess the reliability and validity of the scales. Internal consistency of the measures exists if item loadings, cronbach alpha and composite reliability (reliability indicators) exceed 0.7 [6, 17]. Table 2 shows the item loadings of these measurement items, cronbach's alpha, and composite reliability. Cronbach's Alpha and composite reliability of all four scales (constructs) exceed 0.80 which indicates on adequate reliability.

Convergent validity exists if an average variance extracted (AVE) for each scale (construct) exceeds 0.5 [48]. Adequate discriminant validity exists if the square root of the AVE of each construct is larger than its correlations with the rest of the constructs and each items load more than 0.6 on their respective construct [17]. As shown in Table 3, AVEs ranged from 0.701 to 0.782 and all AVE square roots surpass the correlations with the other constructs which means convergent validity and discriminant validity of the scales are affirmed.

### 4.1 Hypothesis Testing Results

With regard to the assessment of the structural model, we estimated path coefficients (the coefficients of the relationships between variables), which would confirm the research hypotheses. We performed hypothesis testing by following chin [47] recommendation that the significance of each paths coefficient can be estimated by t- test using bootstrapping with 500 subsamples. Table 4 shows a summary of the hypothesis testing. Figure 3 shows path

coefficients ( $\beta$ ), their t-value, and squared R ( $R^2$ ) for dependent constructs.

As shown in Figure 3, consultant participation positively influenced ERP implementation satisfaction ( $\beta=0.508$ , t-value= 6.406,  $p<0.001$ ), user training ( $\beta=0.304$ , t-value= 4.137,  $p<0.001$ ), IT staff skills ( $\beta=0.449$ , t-value= 4.841,  $p<0.001$ ). Therefore, hypothesis 1, 3, and 5 were supported. Hypothesis 2 indicating that user training is positively associated with ERP implementation satisfaction was supported ( $\beta=0.404$ , t-value= 5.210, and  $p<0.001$ ). In support of hypothesis 4, user training was found to partially mediate the relationship between consultant participation and ERP implementation satisfaction because there are statistically significant relationships between user training with consultant participation ( $\beta=0.304$ , t-value= 4.137, and  $p<0.001$ ) and ERP implementation satisfaction ( $\beta=0.404$ , t-value= 5.210, and  $p<0.001$ ). The data also supported that there was a positive relationship between the constructs of consultant participation ( $\beta=0.449$ , t-value= 4.841, and  $p<0.001$ ) and user training ( $\beta=0.429$ , t-value= 5.634, and  $p<0.001$ ) when IT staff skills act as partial mediator. Hence, hypothesis 5 and 6 was supported. Thus, the results showed our proposed hypotheses were confirmed.

Also around 20% of the variance of IT staff skills was described by consultant participation ( $R^2 = 0.201$ ), and about 39% of the variance of user training by consultant participation and IT staff skills ( $R^2 = 0.393$ ), and nearly 63% of the variance of ERP implementation satisfaction by consultant participation and user training ( $R^2 = 0.625$ ). In summary, the research model is successful in an explaining an ERP implementation satisfaction.

Table 2: Summary of the measurement scales

<i>Measurement</i>	<i>Item loading</i>
1. Consultant participation: cronbach Alpha=0.914;composite reliability=0.933  1.1 ERP consultants give us prompt services. 1.2 ERP consultants are dependable. 1.3 ERP consultants have up-to-date facilities. 1.4 ERP consultants provide adequate technical support. 1.5 ERP consultants are experienced and provide quality training and services. 1.6 ERP consultants communicate well with my Organization.	  0.793 0.856 0.828 0.834 0.904 0.803
2. User training: cronbach's Alpha=0.930;composite reliability=0.947  2.1 The training was complete. 2.2 My level of understanding was substantially improved alter going through the training program. 2.3 The training gave me confidence in the new system. 2.4 The training was of adequate length and detail. 2.5 The trainers were knowledgeable and added to my understanding of the system.	  0.879 0.895 0.887 0.838 0.920
3. IT staff skills: cronbach's Alpha=0.853;composite reliability=0.910  3.1 How skilled are the IT staff in your firm in terms of supporting end user computing? 3.2 How would you rate the skills of your IT staff in terms of exploring new technology and knowledge? 3.3 In general, how skilled or sophisticated are the IT staff/personnel in your firm?	  0.895 0.851 0.892
4. ERP implementation satisfaction: cronbach's Alpha=0.972;composite reliability=0.975  4.1 Does the system provide precise information you need? 4.2 Does the information content meet your needs? 4.3 Does the system provide reports that seem to be just about exactly what you need? 4.4 Does the system provide sufficient information? 4.5 Is the system accurate? 4.6 Are you satisfied with the accuracy of the system? 4.7 Do you think the output is presented in a useful format? 4.8 Is the information clear? 4.9 Is the system user friendly? 4.10 Is the system easy to use? 4.11 Do you get the information you need in time? 4.12 Does the system provide up-to-date information?	  0.895 0.935 0.889 0.871 0.905 0.947 0.828 0.890 0.733 0.881 0.848 0.868

Table 3: AVE and the square root of AVE

<i>Dimension</i>	<i>AVE</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. Consultant participation	0.701	<b>0.837</b>			
2. User training	0.782	0.496	<b>0.884</b>		
3. IT staff skills	0.773	0.449	0.378	<b>0.879</b>	
4. ERP implementation satisfaction	0.767	0.708	0.656	0.565	<b>0.876</b>

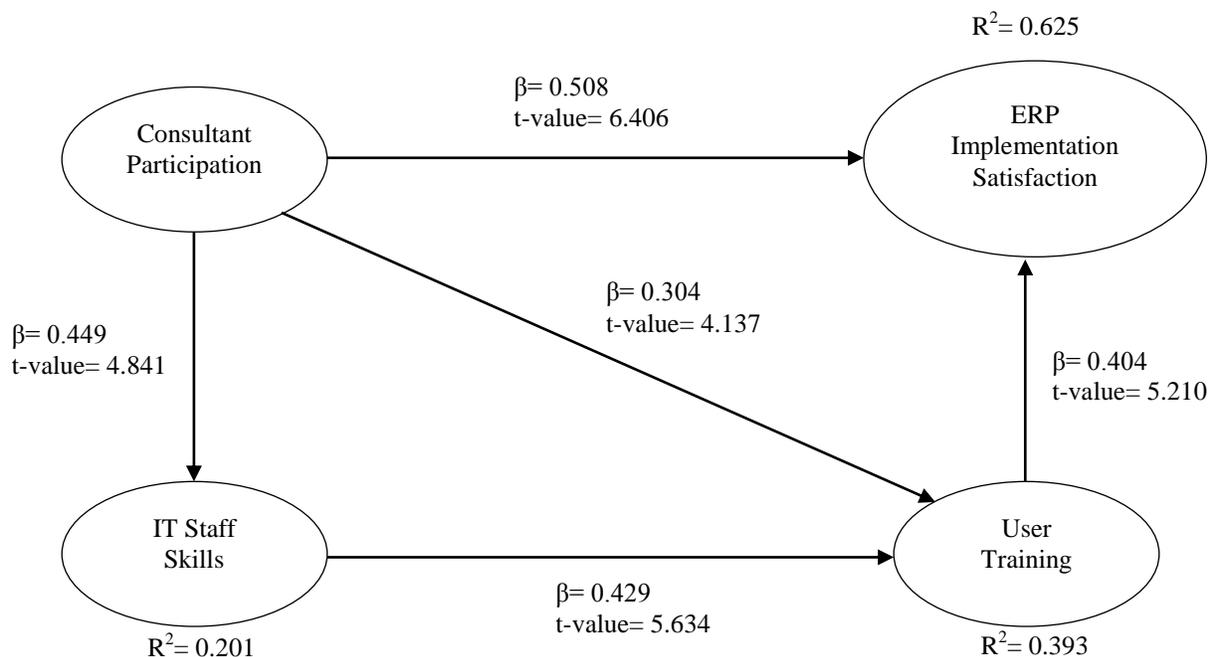


Fig 3. The results for the tested relationships.

Table 2: Summary of the hypotheses testing

<i>Hypothesis</i>	<i>Descriptions</i>	<i>Support</i>
H1	Consultant participation positively influences ERP implementation satisfaction.	YES
H2	User training positively influences ERP implementation satisfaction.	YES
H3	Consultant participation positively influences user training.	YES
H4	User training mediates the relationship between Consultant participation and ERP implementation satisfaction.	YES (partial)
H5	Consultant participation positively influences IT staff skills.	YES
H6	IT staff skills mediate the relationship between Consultant participation and user training.	YES (partial)

## 5. Discussion and Conclusion

Due to high levels of investment in ERP systems and considerable differences in ERP adoption results, much research attention of researchers has been devoted to exploration of CSFs. However, little attention has been paid to the mechanisms of how these factors influence ERP implementation success. Hence, we expand prior research in this area by applying user satisfaction as the best instrument to assess ERP implementation success. The current literature denotes the importance of consultant participation in ERP projects. We began to seek out how consultant participation leads directly and indirectly to ERP implementation satisfaction which has received less attention by prior studies. To achieve the purpose of this study, we developed a research model, consisting of four constructs, namely: consultant participation, user training, IT staff skills, and ERP implementation satisfaction, including the hypothesis that consultant participation (1) influences ERP implementation satisfaction, (2) influences IT staff skills and user training that contribute to ERP implementation satisfaction. All the proposed relationships between constructs were confirmed. The findings of the hypotheses testing are discussed below.

First, analysis shows that consultant participation has a direct positive impact upon ERP implementation satisfaction. Characteristics of ERP systems are better appreciated where ERP consultants have adequate technical skill, communication skill, reliability, and dependability and offer high quality services. Better consultants contribute to higher satisfaction of the ERP users. So, ERP implementation satisfaction depends on consultant participation, particularly on consultant quality.

Second, the results reveal that significant relationships exist among consultant participation, user training, and ERP implementation satisfaction which underscore the critical importance of user training as mediator between consultant participation and ERP implementation satisfaction. It is deduced that consultants who are experienced and knowledgeable are able to provide an appreciable level of training. Through training, ERP consultants can assist users to improve their knowledge and achieve a deeper understanding of the ERP system which enables users to adequately or sufficiently understand the qualities of ERP information and the overall system. Such understanding enhances their satisfaction toward ERP implementation. In other words, interaction between consultants and ERP users in training programs can produce favorable outcomes including ERP implementation satisfaction as knowledge gaps are filled. As a result, we state that where high quality consultant participation is present; an appreciable level of training

will result. Under this condition, a satisfactory ERP implementation is assured.

Third, the results confirmed consultant participation indirectly impacts on user training via IT staff skills in a positive manner. These results suggest that ERP related knowledge can be transferred successfully by consultants when IT staff in adopting organization have general IT knowledge. Such skilled IT staff usually assist the adopting organization to train users, so they can act as Knowledge Bridge between consultants and ERP users and help users to assimilate ERP related knowledge.

The findings show the critical importance of consultant participation, IT staffs skills, and user training in ERP implementation satisfaction. Overall, these findings contribute to a better understanding of how consultant participation leads to ERP implementation satisfaction. In sum, the important contributions of this study are as follow: first, this study directly assesses the effect of consultant participation on user training, IT staff skills, and ERP implementation satisfaction. Second, this study explores the mediating effect of user training on the relationship between consultant participation and ERP implementation satisfaction. Third, this study explores the indirect effect of consultant participation on user training via IT staff skills. Fourth, this study contributes evidence of ERP implementation satisfaction in ERP adopting organizations, especially in Iranian organization through CSFs, namely: consultant participation, It staff skills, and user training.

## 6. Research Implications

This research has several implications. First, from a practical view, recruitment of competent consultants is important because their participation in ERP projects can lead to ERP implementation satisfaction directly and indirectly by enhancing IT staff skills, thereby affecting user training.

Second, training can be regarded as the main factor for enhancing users' satisfaction toward ERP implementation which can lead to long term ERP usage- which play a crucial role in the adopting organization's effectiveness [49]- and decreasees resistance toward ERP. Hence, organizations should employ a two-fold strategy in user training. First, they should be assured of the availability of IT personnel with an adequate level of IT knowledge or skills before ERP implementation. It must also be clear that they are able to understand ERP related knowledge or skills as delivered by the consultants, and then transfer such knowledge to users. Second, they should ensure that users have received complete and adequate training and

whether training programs improve users' ERP related knowledge and skills. Benefits include maximizing satisfaction regarding ERP implementation and long-term satisfaction with the ERP system.

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