

# Does Demographics Influences Change Readiness For Enterprise Resource Planning (ERP) Implementation In Public Sector Undertakings Of Kerala?

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## **Abstract**

*To respond to the ever-increasing uncertainty and competition, enterprises use various types of technologies to re-engineer and develop their business processes. Enterprise Resource Planning (ERP) is one among the most relevant and typical method. ERP systems are developed for integration and automation of business processes of organizations with a view to optimizing benefits with limited resources. ERP guarantees the smooth incorporation of knowledge flows within an enterprise. It helps reduce costs, increase performance, improve the quality of service, allow better decision taking, etc. Implementing ERP helps to gain competitive advantage in all forms of sectors, increasing efficiency, profitability and market performance. A well-planned implementation of ERP will help to bring out tremendous achievements. But it is very important that that different demographic characteristics such as gender, age, experience, education of employees of an organization may affect significantly in the technological adoption of organizations. This paper aims to find out the influence of demographic factors on change readiness towards ERP implementation in Public Sector Undertakings (PSU) of Kerala.*

**Keyword-** *Enterprise resource planning, Demographic factors, Change readiness, Public Sector Undertakings*

## **1. Introduction**

Enterprise Resource Planning Systems (ERPs) are computer based software technologies that organize data across an enterprise and implement uniform protocols for the input, use and delivery of that data. The advent of ERPs in the late 1990s marked a new step in the use of information technology (IT) to restructure work organization and impact organizational change. Using a single and standardized interface, ERP's allows data to be entered and accessed from any part of an organization and can update the operational information from anywhere in the organization. Research shows that the significant factor for implementing Enterprise Resource Planning system is for systematizing the business procedures and systems (Cooke and Peterson, 1998).

Enterprise Resource Planning (ERP) automates most of the functions and integrates organizational information system. The activities supported by ERP system includes all major functions of an organization such as finance, human resource, operations, logistics, marketing, logistics etc. In this dynamic environment, having a well-integrated ERP system and a professionally qualified staff that knows how to effectively use the system is a must for survival. Selecting, implementing and running an ERP program that is ideally fit for the company is a very challenging job. Implementation of ERP can help increase performance, incorporation of information for better decision-making, speedier response time to customer queries, etc. The indirect advantages include enhanced brand identity, increased customer loyalty, customer satisfaction etc. Many direct advantages of an ERP program include business continuity, versatility, greater capacity for research and preparation and the use of the latest technologies.

In sum, ERP is liable to:

- Cause to reduce the size of organizations;

- Reorganize responsibilities ;
- Expand the variety and depth of skills for certain workers while the roles inherent in other workers are deskilled and routinized;
- Perform work intensification in many positions within the company.

Most of our Public Sector Undertakings are working in traditional approach. The real strength and promise of ERP comes from pushing the conventional business model into the enterprise business model. ERP integrates all departments into a single integrated software system running on a single database, allowing the different departments to exchange and communicate information more easily.

PSUs play a pivotal role in directing the national economy in the right path and provide a huge leverage to the government and to intervene in the economy and their involvement is either directly or indirectly helps to achieve the desired socio-economic objectives, which eventually contributes towards the enhancement of living standards. Since independence, PSU sector has been the most reliable and prominent among all sectors which have backed to Indian economic development. PSU has contributed in terms of GDP's growth as well as guaranteed self-reliance to the people of the country. While assessing the present status of PSU's of Kerala, Economic Review, and State planning Board (2017) states that there have been no substantial changes in the total turnover and total value of production for the period from 2012-2017. The collective net profit generated by all 40 PSUs under Department of Industries of GoK was 110.41 crore in 2012-13 and, from 2013-14 onwards, the collective net profits of these State PSUs has gone into negative values, which was (-)131.9 crore in 2015-16 and (-)80.7 crore in 2016-17.

In this period of Internet of Things (IoT), the capacity utilization of PSU's can be increased by using technology up gradation and can create more productivity. This will lead to the economic growth of the state. In order to attain superior performance and better productivity, the researcher presented the idea of using latest technology developments in PSU's for capacity enhancement. The technology upgradation can be done by implementation of ERP and this study intends to assess the effect of demographic factors on change readiness towards ERP implementation in PSU's of Kerala. The technology upgradation will also be able to enhance customer relations to bigger profits. This would also help in making the top management proactive, productive and resourceful. Government of Kerala has 115 nos of working PSUs (111 companies and 4 statutory corporations) and 15 closed PSUs. Various PSU's such as Kerala State Industrial Development Corporation (KSIDC), Kerala Agro Machinery Corporation Ltd. (KAMCO), Small Scale Industries Development Corporation (SIDCO), Kerala Minerals and Metals Ltd etc., were identified to conduct the study.

This paper attempts to study influence of demographic factors on the change readiness towards ERP implementation in PSU's of Kerala and make suitable suggestions. In the present analysis, the demographic variables such as gender, age, education and experience are used.

## 2. Review of Literature

New technologies provide customers with significant benefits, including improved comfort, power and the free movement (Westjohn et al., 2009). As a result, technologies have become an significant factor in daily life, drawing researchers' attention to such different investigations as potential effects of religiosity on technology adoption (Ali et al., 2015), or, from an obverse point of view, the behavioral effects of e-readiness (Ferreira et al., 2014) or evolving post-adoption technologies (Son and Han, 2011). Ultimately, technology applied big improvements for both businesses (Kim and Garrison, 2010; Kurnia et al., 2015) and customers (Lin and Hsieh, 2007), and it could be expected that both parties' priorities and their ability to adopt new customer engagement strategies are brought into line. Many individuals, whether as customers or workers, may not be as psychologically ready as others to incorporate technology. For example, some systems have become too advanced technologically for consumers (Lin and Hsieh, 2007),

and their implementation and use may require excessive effort, time and/or risk (Bateson, 1985). As a consequence, many customers experience Feeling nervous (Meuter et al., 2003) or techno-phobia (Tsiriktsis, 2004), continue suspicious of the potential advantages, or resist improvement (Bruner and Kumar, 2007). This in effect affects their opinions and beliefs towards latest and new technologies. Yen (2005) also provides proof that customers do not recognize the value generated by technology as much as companies promote it. Competence and expectations of customers were also listed as limitations in the adoption of new technologies (Zhu et al., 2007). Therefore, businesses will understand the projected level of income from implementing modern technology is very much dependent on the readiness of their clientele to accept and use the modern forms and methods performing business (Meuter et al., 2005). In general, given the extensive availability of emerging technologies, Meuter et al. (2003) argue that the knowledge about the factors affecting the usage of technology-based solutions is very less.

Today Public sector undertakings have to change their conventional way of doing business and accept new ways. In order to sustain in today's growing global business environment, Public Sector Undertakings have to adopt technology like ERP systems in combination with other technologies like Supply Chain Management (SCM), Customer Relationship Management (CRM), Business Intelligence (BI) etc. and this will help the Public Sector Undertakings to improve business performance in this competitive environment. ERP will accelerate the pace of Business and quickening the RoI, with minimal disturbance to organization and its business. It is also found that no previous studies have examined the impact of demographic factors on ERP implementation in PSU's of Kerala. The present study is a modest effort towards this direction. Shang and Seddon (2000) ERP is defined as: "an ideology of planning and managing the resources of an entire organization in an efficient, productive, and profitable manner, and is manifested in the form of configurable information system packages".

According to Hall (2002), ERP "integrates data across an organization and impose standardized procedures on the input, use and dissemination of that data". Rao (2000) states that the number of companies adopting ERP systems is increasing exponentially with the implementation of ERP systems in the banking, education, insurance, retail and telecommunications sectors. Jaiswal (2007) pointed out that SMEs in India are using ERP implementations less frequently. According to Kale et al (2010), Indian MSME businesses are uncertain and hesitant about adopting ERP. In Indian manufacturing companies, efficiency and value-added developments achieved with the aid of technologies. Around 25% of firms use spreadsheets for production planning and routine reporting and about 50% firms use tools built in house for production planning and monitoring. A tiny 15 percent set up standard ERP packages for their company and processes. Another large number of businesses (10 percent) still use manual production planning methods. Yet in the global context, ERP is seen as one of the significant way of gaining competitive advantage in market and reengineering processes, and thus is increasingly common practice in the SME businesses (Gable and Stewart, 1999).

Hall (2002) suggested to consider the following issues during implementation of ERP:

- First, Managers should understand the issue of change management. ERPs have important consequences for workers and the way their job is structured. In addition, the introduction of ERP can result in expected or accidental job losses as positions become obsolete and this must also be anticipated by managers.
- Second, many administrative, supervisory, and monitoring and data collection roles are also assigned by ERPs to the front end or operational staff / their teams. Top management must consider to what degree this delegation would help to motivate workers or limit their autonomy & flexibility. Furthermore, this shift in aspect of the organization of work can have an adverse co-operation
- Finally, Managers do need to think to what degree the computerization of some workers can cause to offense and discontent among employees

According to Somers et al., 2003, the administrators continue to underestimate the resources involved in handling change and this causes ERP programs to fail and meet their intended goals. Koh et al. (2006) also pointed out the same through a case study. Claps & Anderson (2009) also briefed that the most cited factor causes to the success or failure of ERP in the public sector is organizational change management. Hence the researcher tried to assess the change readiness for the ERP implementation in PSU's of Kerala and the present study thus takes on a different aspect and takes into account five important causative factors such as strategic IT planning, executive commitment, IT skills, change readiness which can lead the organization in to an improved business performance.

Technology developments are assumed to cut costs, improve customer loyalty and demand, boost service quality and/or build alternative distribution networks for current or alternative consumer sections (Bitner et al., 2002; Liljander et al., 2006). Given these advantages, it is not astonishing that companies ranging from financial institutions and airlines to supermarkets, government organizations and colleges, to name but a few, are all introducing new technical innovations to help and attain their objectives. Therefore, technology leads to critical changes in the way services are planned, developed and delivered (Meuter et al., 2005), and helps companies become more competitive and gain higher profits (Jaafar et al., 2007). In addition, the interest of both sellers and organizational buyers in the spread of digital technology has helped to create a large and rising body of e-readiness research in the B2B ecosystem in general (Vize et al., 2013).

### **Demographics influence on change readiness**

In the studies of Tsikriktsis, 2004; Hertzog and Hultsch, 2000 and Porter and Donthu, 2006, done on different demographic characteristics such as gender, age and education respectively shown that these may help to explain behavior explicitly in the background of technology adoption. On the other hand, and contrary to researchers' common assumptions, the work of these variables is far from universally established. Meuter et al. (2003) suggests that surveys have not adequately clarified the acceptance of consumer technology, and this is confirmed by Rogers' (1995) meta-analysis of research on the acceptance of technologies in general, of which just half of the 228 studies examined found a substantial association between age and adoption behavior.

#### **Gender**

Gutek and Bikson (1985) described that males are more technology oriented than females. Similarly, there is indication that males are having good advanced computing skills than females (Harrison and Rainer, 1992), and that they are much less anxious about computer usage than females (Gilroy and Desai, 1986). More recently, Tsikriktsis (2004) notes that males are also much more focused on embracing modern technological technologies than females. Elliot and Hall (2005) claims that men shows greater levels of self-confidence while using new technology than women. Conversely, recent work has also shown that gender was not important in clarifying the acceptance and usage of information technology (Rainer et al., 2003), undertaking online tasks (Shaw and Gant, 2002), the adoption of commerce through mobile (Li et al., 2008), and spending habits (Fram and Grady, 1997).

#### **Age**

Age may also be anticipated to play a major role in the implementation of the technology. In view of Rogers' findings (1995) and their own reservations about the role of demographics in adoption of technology, Meuter et al. (2003) suggests that age is the ultimate accurate demographic predictor of self-service technologies used by consumers. According to Hertzog and Hultsch (2000), elder people appear to experience a decline in understanding their own cognitive skills, which may be a deterrent for them to

accept and exploit modern technical advances. Past studies have shown that age is adversely linked to adoption of technology. For example, Harrison and Rainer (1992) and Nickell and Pinto (1986) documented an adverse relationship between age and computer and technology approaches; Porter and Donthu (2006) also found an adverse relationship between age and the observed ease of use of the computer internet; and Tsikriktsis (2004) endorsed the idea that younger generation are more likely to be "explorers" of latest technology than older people. There is also some evidence, however, that contradicts this argument – not that age can act in the opposite direction (i.e. not that older people may be more technology ready than younger ones), but that it does not play any role in explaining technology adoption in one way or another. For example, previous research found no variations between different age groups in computer use (Dickinson and Gregor, 2006) or adoption of technologies (Weijters et al., 2007). Meuter et al. (2003) also noted that while age is the most reliable self-service technology demographic indicator, it is not the norm for all the clusters found in their analysis. This inconsistency in past research results, as with gender, supports the goal of this study to include age for review.

### **Education**

The level of educational achievement was also recognized as an important forecaster of the technology adoption by consumers. It is also found that less trained people have been shown to have less advanced cognitive systems that hinder their capacity to learn in fresh environments (Hilgard and Bower, 1975). Igbaria and Parasuraman (1989) suggested that education is adversely linked to computer anxiety and Porter and Donthu (2006) found a positive relationship between the level of education and expected ease of use of the Internet. In research by Meuter et al. (2003), education gave conflicting results when it explained how self-service technologies were introduced. Dupagne and Salwen (2005) also found that lower rates of education among Black and Hispanic people of US did not forecast the adoption of technology. It is similar to the findings discussed above regarding age, which were found not to be an indicator of e-readiness in certain studies, and argued for the need for additional testing of the educational variable especially in the context of the present comparative analysis.

### **Experience**

The concept of experience refers to a person's interaction with something over a period of time. In the context of technology, a person's maturity is measured by the number of years of using a specific technology, which will result in a stronger and more stable behavioral intent relationship (Venkatesh & Morris, 2000; Venkatesh et al., 2003; Poon, 2007). The knowledge acquired from their previous experience can be used by users to shape their purpose (Fishbein & Ajzen, 1975). Usually, if users had previous experience with the technology, that will give users a more accurate basis for learning as users equate their incoming knowledge with what they have already experienced (Venkatesh et al., 2003).

## **3. Methodology**

### **Sample**

Data for the study were collected randomly for over a period of three months from a sample of 418 nos of executives and staffs of various Public sector Undertakings of Kerala. The data were collected online through Google Docs as well as printed form. No responses received warranted rejection and could be used for review as all the items in the questionnaire were made mandatory, and so none remained unanswered. The study used various statistical tools on the data collected from various PSU's using standardized questionnaire to measure the influence of demographic factors on the change readiness for implementing ERP in PSU's of Kerala

## **Tools for data collection**

There were two parts to the questionnaire used to gather data for the analysis. The first section elicited particulars related to demographic like gender, age, qualification, experience etc., were collected. The second portion of the questionnaire had 30 elements on a Likert scale of five points. Various types of rating scales were designed to measure attitudes directly (i.e. the person knows their attitude is being studied). The Likert scale in five points allows the individual to express how much they agree or disagree with a particular statement. A Likert scale assumes that the strength or complexity of an approach is linear, i.e. on a spectrum from strongly agree to strongly disagree, which makes it possible to quantify the approaches. The questionnaire was handed over to all the employees of the identified PSU's in person, irrespective of their cadre or position. Five variables were resulted from the 30 items in the questionnaire and are as follows;

### **Strategic IT Planning (SITP)**

Strategic IT preparation describes the ability of an organization to support IT capabilities with the company's evolving, cross-functional business demands. Strategic IT planning involves drawing up plans for the company's future. The "Strategic IT Planning" element is evaluated using things such as IT capability analysis, IT plan revision, continuation of strategic IT plans, top Management participation in IT plans and feedback from all functional areas. Many reports say it is important that a company's IT systems support the company's strategic objectives (Das et al, 1991; Fiedler et al, 1996; Ho, 1996; Kettinger et al, 1994; Miller and Cardinal, 1994; Sampler, 1998). Strategic IT preparation helps to ensure that the IT implementation goals match with the organization's needs (King and Teo, 1996; Segars et al, 1998).

### **Executive Commitment (EC)**

The Executive Commitment is another significant variable used. In this context, executive engagement mentions to the top management's dedication to promoting ERP inside the organization and devoting the resources essential to effectively infuse ERP. The items such as Allocation of resources by functional managers as and when necessary for the ERP project, awareness of the management for the need for long-term ERP, management's excitement about ERP's ability, executives who understand the importance of ERP to the business, description of top Management in relation to ERP, leadership contribution to organizational goals were assessed for the executive engagement. Across multiple research investigating the introduction of new systems and information technology, the top management engagement has been shown to be a common factor (Bancroft et al, 1998; Duchessi et al., 1988; Guha et al, 1997; King & Teo, 1996). It is also stated that essential facilitator for the implementation of ERP is "The top management support" (Holland & Light, 1999 and Yingjie 2005).

### **IT Skills (ITS)**

Information Technology staff play various roles in ERP project execution, such as project supporter, project manager, consultant, IT staff, key user and end user. The skill of the IT personnel is very critical in ERP implementation. The study assessed items such as the capacity of IT staff to conduct daily ERP maintenance, their technical competence, the capacity of IT staff to understand custom ERP systems, the ability to verify system adjustments, the interaction between IT staff and functional managers, and the sharing of IT-related ideas. According to Mashari (2003), an ERP framework is an IT frame that enables information flow inside the enterprise, with suppliers as well as with other participants of supply chain network. ERP combines business and IT functions into a single integrated system which is a business method, not just a software package (Laframboise, 2005; Malhotra, 2010).

### Change Readiness (CR)

Change readiness is the ability to initiate and respond continuously to change in ways ERP build benefit, reduce risks and maintain performance. The items were measured under the variable “change readiness” are employees understand regarding ERP, employee’s knowledge regarding change of job nature with new ERP business processes, addressing of management regarding the employee concerns about ERP, communication regarding the roles of all employees regarding ERP system, assessment of the employee readiness for change towards ERP system, employee’s knowledge regarding the need for organizational change. Early participation of workers in system and process design at all levels like top-down as well as cross-functional contact will create an excitement for the ERP. Workforce dissatisfaction needs to be discussed in early stages and steps taken to resolve its concerns (Guha et al., 1997; Orlikowski & Hofman, 1997; Huber & Glick, 1993).

The biggest obstacle to the introduction of new business processes in the structures is organizational change (Kumaret al., 2003) and is a major cause for the business failures (Al-Mashari et al., 2003; Khawk, 2006; Hong and Kim, 2002). The workforce is an essential part of the business and it is necessary to incorporate employees into the modern business processes and systems (Leonard-Barton, (1988); Majchrzak, (1988); Orlikowski & Hofman, (1997); Powell & Dent-Micallef, (1997); Zuboff, (1988)). The employees must be prepared for these changes and otherwise the implementation can result in failures. (Umble et al., 2003). Cissna (1998) pointed out that, a main factor creating problem in implementing ERP is the resistance to change.

### Improved Business Performance (IBP)

In this paper, "improved business efficiency" refers to the fulfilment of business objectives and enhanced business operational competences as a result of the ERP. According to Saatcioglu (2009); the most significant five advantages of ERP are good task management and feature control, fiscal flow control, knowledge flow control, improved flexibility for the IT infrastructure and regulation of product traffic. Similarly, in the website, Oracle claims that the E-Business Package helps make more knowledgeable decisions and boost the business processes of company while reducing costs (Oracle, 2003a). It published case studies to support its argument that the E-Business package improves the return on investment for its customers (Oracle, 2003b). SAP AG makes statements, pledging' quicker return on investment (RoI) (SAP AG, 2003a, b) with their mySAP ERP solution. PeopleSoft also provided similar analytical study (Peoplesoft, 2003).

### Demographics of the subjects

From the table 1, it can be seen that the subjects belonged to a wide range of demographics. While 280 (67 per cent) were males 138 (33 per cent) were females. There is also heterogeneity with respect with qualifications. While the minimum age of the subjects was 24 and the maximum was found to be 55 years. The organizations in which the study was conducted, being public in nature, there is retirement age and the maximum age was found to be 55 years (in the top management). The demographics of the sample are presented in Table 1.

**Table 1 Demographics of the sample**

Particulars		Number	Percentage
Gender	Male	280	67
	Female	138	33
	Total	418	100
Age	20-29	35	8.4

	30-39	245	58.6
	40-49	36	8.6
	50 and above	102	24.4
<b>Experience</b>	0-9	174	41.6
	10-19	106	25.4
	20-29	138	33
<b>Education (Qualification)</b>	Plus two/Pre degree	105	25.1
	Degree	138	33
	Post-Graduation	70	16.75
	Professional Degree	70	16.75
	Professional PG	35	8.4

The average of the overall experience was found to be 13.55 years. The minimum and maximum experience with the organization studied was less than a year and 27 years respectively. The subjects also belonged to various qualifications can also be seen from the above table. Thus, overall, there was found to be a broad range of demographics among the subjects.

The 418 samples were subjected to Kaiser-Meyer-Olkin (KMO) sampling adequacy measure. The KMO score was 0.711, a level that Kaiser (1974) described as 'marvelous.' The Bartlett sphericity test was also significant ( $p < 0.001$ ), and the test value was high at 19399.457, leading to the assumption that correlations existed in the data set suitable for factor analysis.

### Comparison of Mean

The study has done Exploratory Factor analysis (EFA) to define underlying structure among variables. Through EFA some variables split into two or more variables and some others are combined. Finally, there are five variables derived from exploratory factor analysis, i.e, Strategic IT Planning (SITP), Executive committee (EC), IT skills (ITS), Improved business performance (IBP) and Change Readiness (CR). The researcher used demographic variables such as gender, age, educational qualification and experience to compare the means of levels of organizational commitment.

### Gender of the Respondents

In order to compare the variables between different genders of the respondents, the researcher applied independent sample t test. For this, the researcher fixed the following hypotheses.

- There is no significant difference in SITP between different genders
- There is no significant difference in EC between different genders
- There is no significant difference in ITS between different genders
- There is no significant difference in CR between different genders
- There is no significant difference in IBP between different genders

Table provided below discusses the results of independent sample t-test along with mean and standard deviation.

**Table 2: Independent Sample t test- Gender**

	Gender of the Respondents	Mean	SD	T Value	Sig.
SITP	Male	3.80	2.04930	-2.296	.022
	Female	3.88	1.44692		
EC	Male	3.93	.98934	-3.759	.000

	Female	4.02	1.93277		
ITS	Male	4.10	1.31574	.070	.944
	Female	4.10	1.20605		
CR	Male	4.03	.74877	26.518	.000
	Female	3.62	1.10117		
IBP	Male	4.22	.59971	18.200	.000
	Female	3.80	2.17490		

As seen from the table, the significance values of all the variables are lower than 0.05, except ‘ITS’. It is implied that there is significant difference in all variables with regard to gender except ‘ITS’. In case of ‘ITS’, it is observed that there is no significant difference in mean scores.

## ANOVA

### Age of the Respondents

In order to compare the variables between different age groups, the researcher fixed the following hypotheses.

- There is no significant difference in SITP between different age groups
- There is no significant difference in EC between different age groups
- There is no significant difference in ITS between different age groups
- There is no significant difference in CR between different age groups
- There is no significant difference in IBP between different age groups

Table provided below discusses the results of test of one-way ANOVA along with f value and significance values.

**Table 3: One Way ANOVA- Age of the Respondents**

		Sum of Squares	df	Mean Square	F	Sig.
SITP	Between Groups	509.169	28	18.185	7.309	.000
	Within Groups	967.829	389	2.488		
	Total	1476.998	417			
EC	Between Groups	518.248	28	18.509	24.550	.000
	Within Groups	293.276	389	.754		
	Total	811.524	417			
ITS	Between Groups	284.752	28	10.170	9.952	.000
	Within Groups	397.528	389	1.022		
	Total	682.280	417			
CR	Between Groups	720.827	28	25.744	68.147	.000
	Within Groups	146.953	389	.378		
	Total	867.780	417			
IBP	Between Groups	944.893	28	33.746	32.870	.000
	Within Groups	399.367	389	1.027		
	Total	1344.261	417			

From the test of one-way ANOVA, it is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is showing that there is significant difference in all the study variables with regard to age of the respondents.

## Educational Qualification

In order to compare the variables between different educational qualifications, the researcher fixed the following hypotheses.

- There is no significant difference in SITP between different educational qualifications
- There is no significant difference in EC between different educational qualifications
- There is no significant difference in ITS between different educational qualifications
- There is no significant difference in CR between different educational qualifications
- There is no significant difference in IBP between different educational qualifications

Table provided below discusses the results of test of one-way ANOVA along with f value and significance values.

**Table 4: One Way ANOVA- Educational Qualification of the Respondents**

		Sum of Squares	df	Mean Square	F	Sig.
SITP	Between Groups	687.027	4	171.757	89.795	.000
	Within Groups	789.971	413	1.913		
	Total	1476.998	417			
EC	Between Groups	34.583	4	8.646	4.596	.001
	Within Groups	776.941	413	1.881		
	Total	811.524	417			
ITS	Between Groups	87.328	4	21.832	15.155	.000
	Within Groups	594.952	413	1.441		
	Total	682.280	417			
CR	Between Groups	213.638	4	53.410	33.721	.000
	Within Groups	654.142	413	1.584		
	Total	867.780	417			
IBP	Between Groups	513.650	4	128.412	63.850	.000
	Within Groups	830.611	413	2.011		
	Total	1344.261	417			

From the test of one-way ANOVA, it is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is representing that there is significant difference in all the study variables with regard to educational qualification of the respondents.

## Experience of the Respondents

In order to compare the variables between different levels of experiences, the researcher fixed the following hypotheses.

- There is no significant difference in SITP between different levels of experiences
- There is no significant difference in EC between different levels of experiences
- There is no significant difference in ITS between different levels of experiences
- There is no significant difference in CR between different levels of experiences
- There is no significant difference in IBP between different levels of experiences

Table provided below discusses the results of test of one-way ANOVA along with f value and significance values.

**Table 5: One Way ANOVA- Experience of the Respondents**

		Sum of Squares	df	Mean Square	F	Sig.
SITP	Between Groups	192.398	2	96.199	31.078	.000
	Within Groups	1284.600	415	3.095		
	Total	1476.998	417			
EC	Between Groups	150.419	2	75.210	47.212	.000
	Within Groups	661.104	415	1.593		
	Total	811.524	417			
ITS	Between Groups	85.167	2	42.584	29.596	.000
	Within Groups	597.112	415	1.439		
	Total	682.280	417			
CR	Between Groups	456.974	2	228.487	230.820	.000
	Within Groups	410.806	415	.990		
	Total	867.780	417			
IBP	Between Groups	788.293	2	394.147	294.209	.000
	Within Groups	555.968	415	1.340		
	Total	1344.261	417			

From the test of one-way ANOVA, it is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is showing that there is significant difference in all the study variables with regard to experiences of the respondents.

### Summary of Comparison of Mean

The Table 4.12 provided below explains the summary of comparison of mean and the results of testing of hypotheses

**Table 6. Summary of Comparison of Mean**

Variables	Gender	Age	Educational Qualification	Experience
SITP	Rejected	Rejected	Rejected	Rejected
EC	Rejected	Rejected	Rejected	Rejected
ITS	Rejected	Rejected	Rejected	Rejected

CR	Rejected	Rejected	Rejected	Rejected
IBP	Rejected	Rejected	Rejected	Rejected

In case of comparison of mean, the study fixed 25 hypotheses. Based on the test results and significance values, all the study hypotheses were rejected.

#### 4. Conclusion and Recommendation

The majority of the respondents were male (280 nos, 67 %) while another 138 were female (33 %). In order to compare the variables between different genders of the respondents, the researcher applied independent sample t test and found that the significance values of all the variables are lower than 0.05, except 'ITS'. It is implied that there is significant difference in all variables with regard to gender except 'ITS'. In case of 'ITS', it is observed that there is no significant difference in mean scores. The researcher had also conducted the test of one-way ANOVA and it is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is showing that there is significant difference in all the study variables with regard to age of the respondents.

In terms of education level, a total of 138 employees (33%) are graduates and 105 employees (25.1 %) are having plus two/pre-degree qualification. In order to compare the variables between different educational qualifications, the researcher fixed the hypotheses and conducted One-way ANOVA. It is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is representing that there is significant difference in all the study variables with regard to educational qualification of the respondents.

In order to compare the variables between different levels of experiences, the researcher fixed the hypotheses and it is observed that the significant values of all the variables are lower than 0.05, hence rejected all the null hypotheses. It is showing that there is significant difference in all the study variables with regard to experiences of the respondents. In the study on comparison of mean, the study fixed 25 hypothesis and based on the test results and significance values, all the study hypotheses were rejected.

It can be inferred, based on the studies that the employees of PSU's should be aware of a ERP implementation in the respective organizations in early stages itself. In other words, they should be happy and willing to be in the "early adopters" group. Such workers will also be able to act as a catalyst in implementing ERP applications in other departments, other than PSUS's of Kerala. As stated, the higher education level is related with change readiness, that affects the role of employees as technology development agents in PSU's of Kerala. Therefore, the recruits of PSU's must be selected based on their level of education and experience. One of the drawbacks of this study is that it used questionnaire only and could not conduct interview due to time constraints. The survey was also conducted only in selected PSU's. Further study should therefore consider exploring the use of ERP through qualitative analysis, and extending the sample to include more Kerala PSUs.

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