

# **The Influence of Communication Satisfaction and Employee Satisfaction on Customers of Virtual E-Organizations**

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## **Abstract**

Customer Satisfaction is the key factor of any organization's success. There is a lack of concerns on the relation between the Internal Organizational Factors and their effect on Customer Satisfaction for Virtual E-Organizations. This study examines the interrelations between Organizational Factors such as Employee Satisfaction and Communication satisfaction and how those two factors influence Customer Satisfaction as an indication of the Usability for Virtual/E-Organizations. Two online surveys were used. The First one was an attempt to discover the relationship between Communication Satisfaction and Employee Job Satisfaction. The second one was the Customer satisfaction survey. This survey was sent to Customers of seven different types of Virtual\ E-Organizations. Hypotheses were tested by conducting Regression analysis to investigate the relation between Variables. Data were analyzed using IBM SPSS Statistics 25. The results show that Communication and Employee satisfaction were highly correlated. Additionally, Customer Satisfaction was Correlated with Employee Satisfaction with a high correlation. Also, communication and customer satisfaction were moderately correlated. The findings suggest that good communication between employees can create reasonable Employee Satisfaction, subsequently improving customer satisfaction.

## **Keywords**

Virtual E-organizations, Usability, Customer Satisfaction, Employee Satisfaction, and Communication Satisfaction.

## **1. Introduction**

In Today's Industry of rapidly growing interfaces, Virtual\E-organizations are expected to be one of the promising organizational forms in this Internet cultural era(Gil, Berenguer et al. 2008). E-organizations are organizations established and operated based on the Internet and other related technologies in an Internet culture environment. Whereby organizations will be placing the Internet at the center of their Business (Azumah, Koh et al. 2009). E-organization is defined by the degree to which it uses global (Internet) and private (intranet and extranet) network linkages. According to the heaviness of Internet usage.

There are many differences between traditional organizations and E-Organizations. Organizational structure in traditional organizations is hierarchical. E-organizations is a centerless, networked and flexible structure and knowledge focused on internal processes in traditional organizations and focus on customers in E-organizations. Those differences make E-Organizations management challenging (Ellatif and Ahmed 2013), especially in Arab Countries such as Egypt, where this study is concerned. Figure 1 shows some of those challenges.

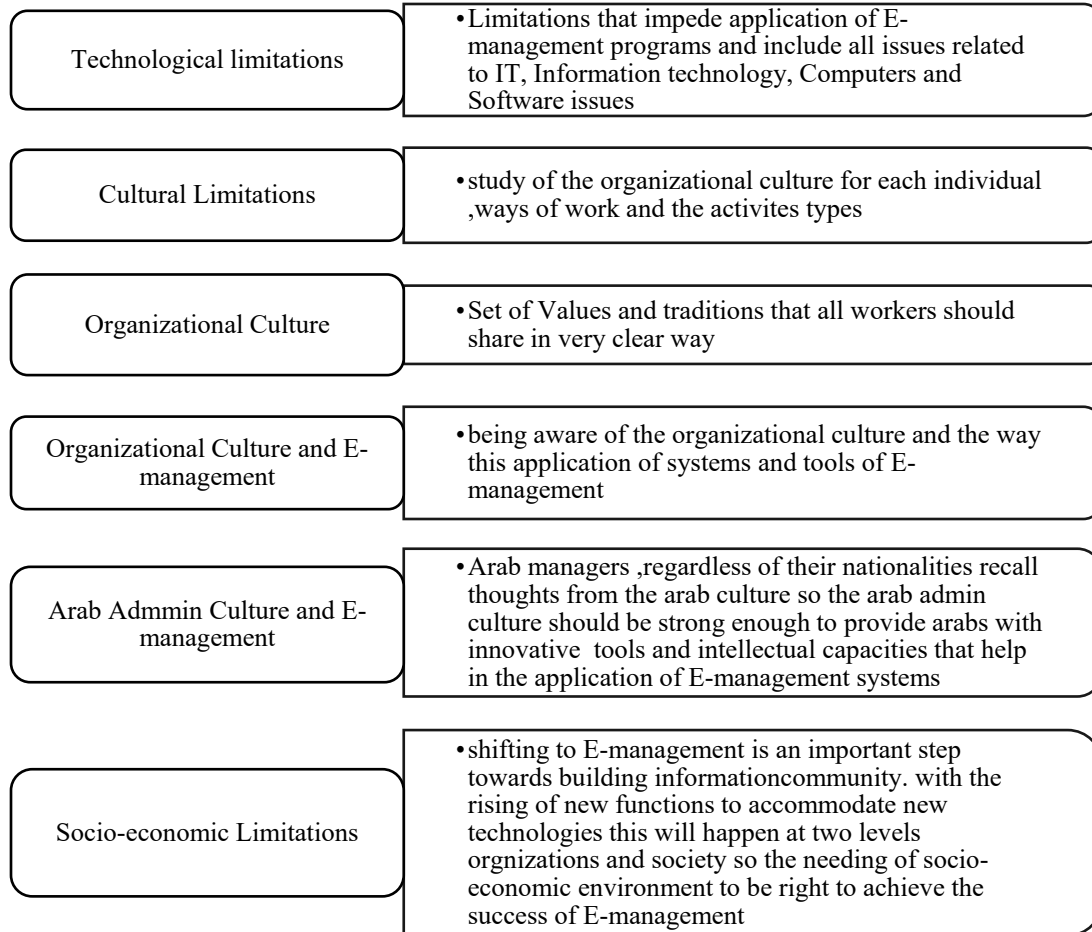


Figure 1. The Challenges of E-management in the Arab environment

The Relation between Employees and Customers of Virtual\E-organizations is not the same for traditional organizations. For Virtual Organizations, Employees and Customers do not meet face to face for accomplishments of different tasks. The actual connections depend totally on the Internet and various platforms. This study concerns the nature of these connections and to what extent those connections affect the whole organization. This study is divided into two sections, the first one is Employee Level, and the second one is Customer Level.

### 1.1 Objectives

For this research, Usability from a different perspective was studied. Customer Satisfaction as a factor that Indicates Usability of Virtual\E-organizations. The Link between those two external factors and two Internal organizational factors (Employee Job Satisfaction and Communication Satisfaction) was the scope of this study.

This study aims to Clarify and Understand the relation between the internal organizational factors and the external factors of the organization, which affects its Usability for the users. The Question we want to be answered is, "is there a significant relationship between the organization's Employees and the same organization's customers ?". in other words, Does the Usability of E-Organizations affected by the Employees and the nature of communications internal those organizations?

Figure 2 shows the Model of this study, which shows The relation between Employee level and Customer level (Usability Factors)

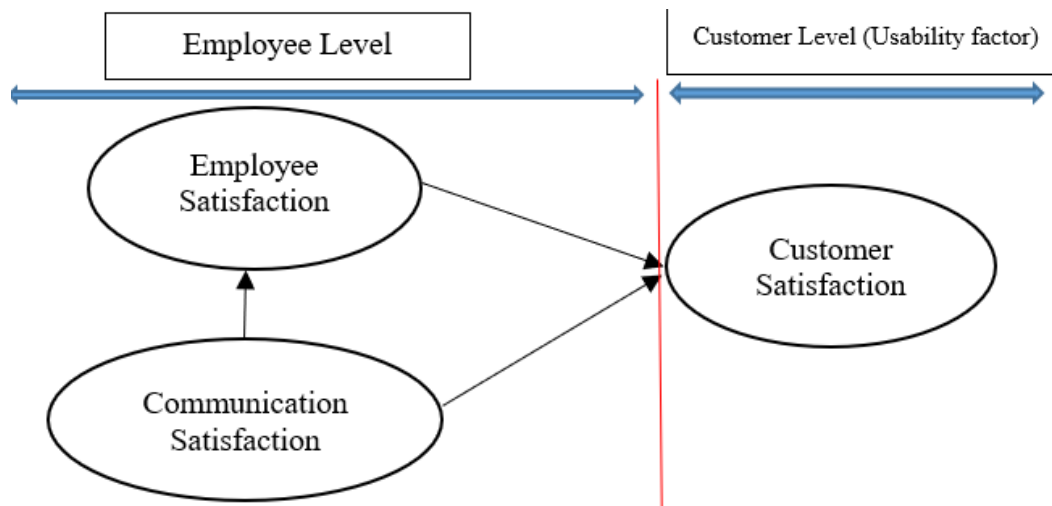


Figure 2. Study Model

## 2. Literature Review

Virtual E-Organizations are expected to be one of the suitable organizational forms in this Internet cultural era. Virtual E-Organization is a functional system that is flexible and open to exchange and shares its effects with internal or external environments (Ellatif and Ahmed 2013). E-Banking, E-Business, E-Commerce, and E-services were born in the internet Environment and developed with the internet development. Virtual E-Organizations depend on the Internet to connect employees and communications between employees and Customers. They always seek to make their interfaces Usable to Increase Customer Satisfaction and Loyalty. Usability studies for virtual E-Organizations mostly focus on software development only to Improve System Usability (Patel and Dalal 2013).

Organizational Usability is about the match between user and system, organization and system, and environment and system (Hertzum 2018). ISO 9241-11 defines Usability as the "extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (Swaid and Suid 2019). ISO considers Customer Satisfaction one of the Usability Measures. Nielsen also proposed a usability model including five attributes: learnability, efficiency, memorability, error covering, and satisfaction (Zha 2019). Another study adopted the ISO's broad definition, consisting of three distinct effectiveness, efficiency, and satisfaction. Furthermore, a study adopted the ISO's broad definition, consisting of three distinct effectiveness, efficiency, and satisfaction (Frokjær, Hertzum et al. 2000). Satisfaction means being free from discomfort and having a positive attitude towards using a service served by the organization (Harrison, Flood et al. 2013).

The relationship between Customer Satisfaction and employee satisfaction has been studied from different perspectives and for different organizations. In empirical studies, employee satisfaction is considered either an overall feeling about the job or a related set of attitudes about various aspects of the job. (Batool and Batool 2017) One of those studies assessed coffee shops through the service profit model, which suggested that Employee satisfaction influences Customer satisfaction (Son, Kim et al. 2021). The hypothesis that employee satisfaction positively influences customer satisfaction has also been tested in high-contact service industries. Data were analyzed, and the hypothesis was proven true (Yee, Yeung et al. 2008). Hospitality Industries also studied the relation between Employee Satisfaction and Customer Satisfaction. Data for this study were collected from customers and employees then analyzed by Structural Equation Modeling (SEM), which also concluded a significant relation (Chi and Gursoy 2009). Gil and Berenguer also concluded from their study that Positive employee satisfaction would achieve higher customer satisfaction (Gil, Berenguer et al. 2008). A study of employees argues that higher employee satisfaction will improve customer satisfaction (Turkyilmaz, Akman et al. 2011). In addition, a study conducted on employees and

store managers suggests that employee satisfaction has a significant impact on customer satisfaction (Yee, Yeung et al. 2008).

The relation between Employee satisfaction and Communication Satisfaction was the major of many studies. Communication satisfaction is defined as summing an individual's satisfaction with information flow and relationship variables (Tsai, Chuang et al. 2009). Communication satisfaction Eight Dimensions are satisfaction with communication climate, satisfaction with superiors, Satisfaction with Organizational Integration, Satisfaction with Media Quality, Satisfaction with Horizontal Informal Communication, Satisfaction with General Organizational Perspective, Satisfaction with Communication with Subordinates, and Personal Feedback (Downs and Hazen 1977). The connection between internal communication satisfaction and job satisfaction was first explored by Herzberg 70 years ago (Tkalac Verčič 2021). Communication satisfaction has received considerable attention in the research literature in the past 20 years, and studies have linked communication satisfaction with job satisfaction (Gray and Laidlaw 2016).

As a Summary, this literature review is divided into four Paragraphs. The first one shows the Virtual E-Organizations development and to what extent it is essential to be Usable for their Customers. The second paragraph shows that Customer Satisfaction is considered a main Indication and measure for Usability. The third paragraph shows the relation between Customer Satisfaction and Employee Satisfaction. Also, it shows many studies which studied this relation. However, all those studies focused on the traditional organizations and the communications between employees and customers are face to face. The fourth and last paragraph shows the relation between Employee Satisfaction and Communication Satisfaction and how those two Internal organizational factors are connected and related. We conclude that many studies studied Usability for Virtual E-organizations and many studies on relationships between customer satisfaction and Usability of those organizations. Other studies studied the relationship between customer satisfaction and employee satisfaction. The Gap here is the answer to this Question 'Could we Improve Customer Satisfaction (Usability Indicator) for Virtual E-Organizations by Improving Employee Satisfaction and Communication Satisfaction for those Organizations ?'

### 3. Methods

To study the relation between Communication Satisfaction and Employee Satisfaction, the relation between Employee Satisfaction and Customer Satisfaction, and the relation between Communication Satisfaction of employees and Customer Satisfaction. The following Hypotheses were checked :

Hypothesis 1. Communication Satisfaction of the Employee will have a significant relationship with Employee Satisfaction.

Hypothesis 2. Employee Satisfaction will have a significant Influence on Customer Satisfaction.

Hypothesis 3. Communication Satisfaction will have a Significant Influence on Customer Satisfaction.

For those Hypotheses, data were collected from the surveys, Employee satisfaction survey, Communication satisfaction questionnaire (CSQ), and Customer Satisfaction Survey. Data were inserted for IBM SPSS Statistics 25. The Normality of data was checked as the first step before analysis. Data were not Normal, So Ordinal Regression Analysis was chosen to check the relationships.

### 4. Data Collection

For this study, Egypt was the country of the sample with a demographic makeup representing the Arab environment. our surveys were sent to different virtual E-organizations: Information Technology and Software Services, E-Commerce, Marketing & Graphic Design agencies, Architect Engineering agencies, Online banking and financial services, education, and nonprofit organizations.

Four items were extracted from a study on job satisfaction in achieving customer satisfaction for the Employee Satisfaction Survey constructs. To measure employees' satisfaction with the characteristics of the job itself, how much they enjoy their jobs, opportunities for growth and promotions, salary satisfaction, to what extent they feel they are important and how they are satisfied with the recognition of their efforts (Hartline and Ferrell 1996). All items used words that employees could easily understand and respond. We used a seven-point Likert scale, in which 1= strongly negative and 7= strongly positive. We preferred a seven-point scale over a five-point scale due to its ability to detect more minor differences (Veldhuyzen van Zanten, Chiba et al. 2006)

Communication Satisfaction Questionnaire (CSQ) was used for the communication satisfaction survey constructs. CSQ was developed by C. W. Downs and Hazen (1977) to discover the relationship between communication and job satisfaction (Clampitt 1993, Vokic and Ćorić 2017). Communication Satisfaction Questionnaire (CSQ) is one of the most comprehensive instruments available because it assesses the direction of information flow, the formal and informal channels of communication flow, relationships with various organization members, and the forms of communication (Gray and Laidlaw 2016).

For the Customer Satisfaction and Loyalty Survey constructs, we asked many employees and customers of virtual E-organizations about the main items that directly affect customer satisfaction. Four items were concluded: the quality of the service, to what extent the output meets the customer's expectations, satisfaction with the timeline and deadline of the service, and the satisfaction with the communication with employees. All items used words that employees could easily understand and respond. We used a seven-point Likert scale, in which 1= strongly negative and 7= strongly positive.

All Surveys were online surveys built by google forms. Google forms were chosen because of the easiness of usage available for all people and all people familiar with google services. We share our surveys on different platforms such as LinkedIn to get a wide range of responses. To increase the reliability of the completed surveys, we excluded those with organizations that do not fit the Virtual E-Organizations the questionnaires were excluded from the statistical analysis. Finally, 253 responses from employees and 215 responses from customers were used for the analysis.

## 5. Results and Discussion

### 5.1 Numerical Results

All the responses were analyzed, and demographical analysis is presented in Table 1, which shows the demographic characteristics of the sample. Of the 253 responses, 76.3% were male, and 23.7% were female. Age was distributed, with the majority of 77.1% between the ages of 21 and 29. About 88.5 % have Bachelor's degree. Concerning tenure, 52.2% experienced from 1-4 years with their organizations. For the type of E-service, Figure 3 shows 162 (62%) responses from Information technology and software services, 17 (6.7 %) from E-commerce, and 17(6.7%) from online Financial services.

For Hypothesis 1. The result was that Communication satisfaction was a significant positive predictor of Employee satisfaction as shown in Table 2 model fitting information of hypothesis 1, which shows p-value =0.000, which  $< p=0.05$ , means that communication satisfaction has a significant effect on employee satisfaction. Furthermore, according to Pearson, the Goodness of fit was (chi-square=2441.219, df=2679, and Sig= 1.000) means that the Model fits for data well. R-square=0.63, which means that 63% of Employee satisfaction depends on Communication satisfaction. Parameter Estimate was 2.211 with std.error =0.157, df=1 and Significance= 0.000 . then we build a Generalized linear Model, which results in Exp(B)=9.123, which indicates that the odds of being in a higher level on employee satisfaction increase by a factor of 9.123 for every one unit increase in Communication satisfaction. We did a correlation analysis between Communication satisfaction, and employee satisfaction, which is correlated by 0.774\*\* means they are highly correlated.

For Hypothesis 2. The result was that Employee satisfaction was a significant positive predictor of Customer Satisfaction. As shown in Table 2, the Model fitting information of hypothesis 2. shows p-value =0.004, which  $< p=0.05$  means that employee satisfaction significantly influences customer satisfaction. Moreover, the Goodness of fit was (chi-square=279.724, df=249, and Sig= 0.088), which  $> p= 0.05$  and means that the Model fits for data well. R-square=0.40, which means that 40% of Customer satisfaction depends on employee satisfaction.

Parameter Estimate was 1.731 with std.error =0.507, df=1 and Significance= 0.001 . then we build a Generalized linear Model, which results in Exp(B)=3.865, which indicates that the odds of being in a higher level on Customer satisfaction increase by a factor of 3.865 for every one unit increase in employee satisfaction.

And for this hypothesis, we check if the type of service as a factor influences the significance of our hypothesis. The result was that IT services and software solutions are the most affected type by the employee satisfaction to enhance their customer satisfaction with  $p=0.035$  less than  $p=0.05$ . We did a correlation analysis between Customer satisfaction and employee satisfaction, which is correlated by 0.539\*\*, highly correlated.

For Hypothesis 3. The result was that Communication satisfaction was a significant positive predictor of customer satisfaction. As shown in Table 2, model fitting information of hypothesis 3. which shows p-value =0.026 which  $<$

$p=0.05$  which means that communication satisfaction has significant on Customer satisfaction And the Goodness of fit according to Pearson was ( $\chi^2=221.455$ ,  $df=197$ , and  $Sig= 0.112$ ), which  $p > 0.05$  and means that Model fits for data well.  $R\text{-square}=0.15$ , which means that 15% of Customer satisfaction depends on Communication satisfaction.

Parameter Estimate was 0.895 with  $std.error = 0.404$ ,  $df=1$  and  $Significance= 0.027$  . then we build a Generalized linear Model, which results in  $Exp(B)=2.449$ , which means that the odds ratio indicates that the odds of being in a higher level on customer satisfaction increase by a factor of 2.449 for every one unit increase in Communication satisfaction. We did a correlation analysis between Communication satisfaction and employee satisfaction, which is correlated by  $0.371^{**}$ , moderately correlated.

## 5.2 Graphical Results

Table 1. Demographical analysis of Employees responses

Gender				
	Frequency	Percent	Valid Percent	Cum. Percent
Male	193	76.3	76.3	76.3
Female	60	23.7	23.7	100.0
Total	253	100.0	100.0	
Age				
	Frequency	Percent	Valid Percent	Cum. Percent
21-29	195	77.1	77.1	77.1
30-39	50	19.8	19.8	96.8
40-49	7	2.8	2.8	99.6
50-59	1	0.4	0.4	100.0
Total	253	100.0	100.0	
Level of Education				
	Frequency	Percent	Valid Percent	Cum. Percent
Doctoral Degree	3	1.2	1.2	1.2
Master's Degree	24	9.5	9.5	10.7
Bachelor's Degree	224	88.5	88.5	99.2
Secondary Degree	2	0.8	0.8	100.0
Total	253	100.0	100.0	
Years of Expeirnce				
	Frequency	Percent	Valid Percent	Cum.Percent
Less than a year	91	36.0	36.0	36.0
1-4 years	132	52.2	52.2	88.1
5-8 years	19	7.5	7.5	95.7
more than 9 years	11	4.3	4.3	100.0
Total	253	100.0	100.0	

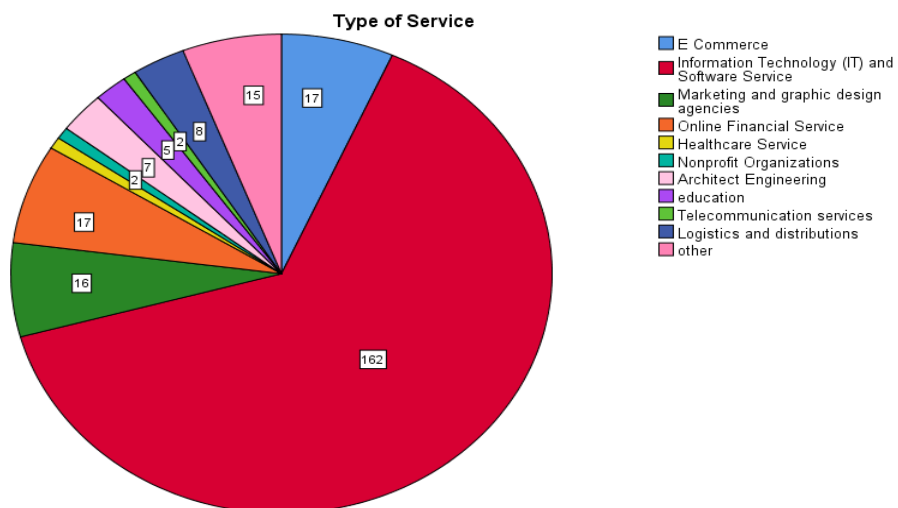


Figure 3. Type of service

Table 2. Model Fitting Information for all Hypotheses

<b>Model Fitting Information for Hypothesis 1.</b>				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1312.595			
Final	1058.561	254.034	1	0.000
<b>Model Fitting Information for hypothesis 2.</b>				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	127.027			
Final	111.464	15.562	4	0.004
<b>Model Fitting Information for Hypothesis 3.</b>				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	119.284			
Final	114.308	4.976	1	0.026

### 5.3 Proposed Improvements

According to this study, it is concluded that for virtual E-Organizations, which are the industry's future, to increase their employee satisfaction, they should increase Communication satisfaction. To increase customer satisfaction, they should increase their employee satisfaction and communication satisfaction of employees. And Figure 4 shows the correlation between all those variables

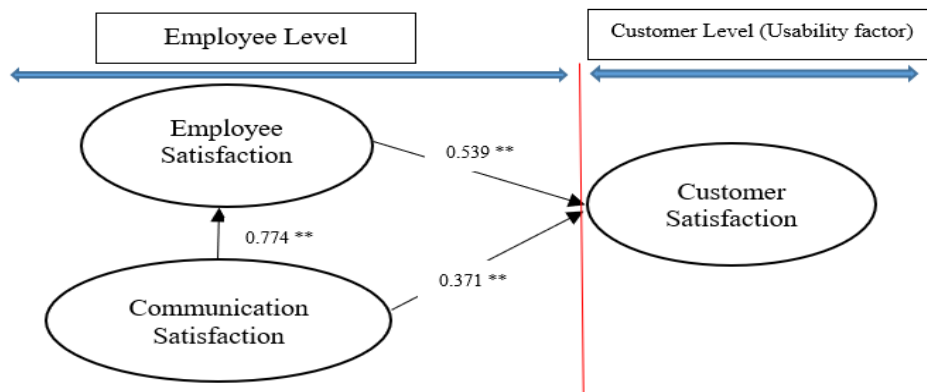


Figure 4. Correlation coefficients

### 5.4 Validation

For the Validation of each hypothesis, we checked the Goodness of fit. For all hypotheses,  $p > 0.05$  means that the data fit the Model well. Furthermore, Table 3 shows all Goodness of fits for all hypotheses.

Table 3. Goodness-of-Fit for all hypotheses

<b>Goodness-of-Fit for hypothesis 1.</b>			
	Chi-Square	df	Sig.
Pearson	2441.219	2679	1.000
<b>Goodness-of-Fit for hypothesis 2.</b>			
	Chi-Square	df	Sig.
Pearson	279.724	249	0.088
<b>Goodness-of-Fit for hypothesis 3.</b>			
	Chi-Square	df	Sig.
Pearson	221.455	197	0.112

## 6. Conclusion

This study focused on Virtual E-Organizations and their customer satisfaction as an indication of usability measurement. This study linked two Internal organizational factors with Customer Satisfaction. Those factors are Employee Satisfaction and Communication Satisfaction. Three hypotheses were tested to check those relations. The first hypothesis, which links communication satisfaction and employee, shows a significant relationship between communication satisfaction and employee satisfaction with  $p=0.000$  with correlation coefficient =  $0.774^{**}$ , which means high correlation. The second hypothesis, which links employee satisfaction and customer satisfaction, shows a significant relationship between them with  $p=0.004$  and correlation coefficient= $0.534^{**}$ , which means highly correlated. The last hypothesis, which links between communication satisfaction and customer satisfaction, shows a significant relationship with  $p=0.026$  and correlation coefficient= $0.371^{**}$ , which means moderately correlated. So the conclusion is that for virtual organizations to increase their customer satisfaction, they should increase two internal organizational factors: employee satisfaction and communication satisfaction. And to increase their Employee satisfaction, they should increase the communication satisfaction of their employees.

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