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International Journal of Research in IT, Management & Engineering

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Design of a Power Electronic Assisted OLTC for Grid Voltage Regulation

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ABSTRACT

High penetration of distributed generation (DG) has led to frequent voltage fluctuations in the distribution network. This project describes the design of a partially rated, power electronic-assisted on-load tap-changing (OLTC) autotransformer. Positive and negative compensation of the grid voltage can be achieved on feeders that have high distributed generation and/or loading. A novel design of taps comprised of several no-load switches and a single semiconductor-mechanical hybrid switch have been proposed, that requires reduced voltage rating and a number of switches. In steady state, the mechanical switch in the hybrid switch conducts the load current resulting in low steady-state losses. During the tap change process, the OLTC uses semiconductor switches, namely insulated-gate bipolar transistor /metal-oxide semiconductor field-effect transistor, thus achieving arc-free tap change and long lifetime of switches. The OLTC system has been customized for both low-voltage and medium-voltage three-phase distribution networks. An open-delta configuration for the medium-voltage application has been proposed that requires only two OLTC units to control all three line voltages.

Keywords: Distributed power generation, four-step commutation, hybrid switch, On-load tap changer (OLTC), series compensation, transformer, voltage fluctuations

Introduction

In recent years, high penetration of distributed generation (DG) driven by photovoltaic (PV) panels in the distribution network has led to frequent voltage fluctuations and over voltages. Voltage control using traditional voltage regulators is unable to cope with this situation as frequent tap changes reduce the life time of the mechanical taps due to arcing. The voltage controls through shunt compensation methods are ineffective and expensive. Series compensation through centralized on-load tap-changing (OLTC) distribution transformers or feeder-specific compensators is hence a suitable strategy for voltage regulation.

OLTC voltage regulators and sub transmission transformer use taps made of mechanical switches that can be operated under load. Under conditions of recurrent voltage fluctuation due to DG, the mechanical switches undergo frequent wear and tear during tap change due to the arcing phenomenon. This results in lower life time of the switches and necessitates repeated maintenance. Nevertheless, these mechanical taps have the advantage of high overload capacity and low on state losses (1,2,3). On the other hand, electronic tap changers use semiconductor switches that do not have any arcing problems. They provide flexibility in operation but suffer from much higher steady-state losses. By combining the advantages of electronic and mechanical tap changers, power-electronic-assisted tap changers are obtained (4,5,6). The basic idea is to use the mechanical switches in steady state to ensure low steady-state losses and semiconductor switches during tap change to provide an arc-free tap-changing process

(7,8,9). The high overload capacity of mechanical switches is of advantage if fault conditions occur during steady-state operation. Therefore, the performance of hybrid OLTC for high fault current does not change (10,11).

This project describes the design of a power-electronic-assisted OLTC autotransformer that voltage regulation through series compensation. The novel design of the OLTC autotransformer is cost effective, efficient, and has a long lifetime. Unlike earlier works that use thyristors, back-to-back series connected insulated gate bipolar transistors (IGBTs) with ant parallel diodes are used for the two electronic switches. Voltage polarity-based four-step current commutation is used for changing between the taps which results in fast commutation without the need for current limiting impedance. The OLTC has been customized for application in medium-voltage (MV) and low-voltage (LV) three-phase distribution networks. A low-level control mechanism and protection scheme is also developed, thus providing a holistic design for building a prototype.

Problem Definition

Consumers receiving power from an electric utility can observe nominal incoming voltage level (e.g. 120V) shift over the course of a day to a small or large degree. There are many factors contributing to the amount of voltage level fluctuation observed including:

- i). Location on the local distribution line
- ii). Proximity to large electricity consumers.
- iii). Proximity to utility voltage regulating equipment
- iv). Seasonal variations in overall system voltage levels
- v). Load factor on local transmission and distribution system, etc.

Voltage that is too high can cause premature failure of electrical and electronic components (e.g. circuit boards) due to overheating. The damage caused by overheating is cumulative and irreversible. Frequent episodes of mild overheating can result in the same amount of component damage as a few episodes of severe overheating.

OLTC voltage regulators and sub transmission transformer uses mechanical and electronic tap changers to compensate voltage fluctuations.

The mechanical tap changing voltage regulator utilizes contactors or brushes along with some type of motorized drive system to change the taps on the secondary of the transformer.

Mechanical drive components, brushes and contractors require regular maintenance and/or replacement

Frequent overloads can damage brushes

Speed of voltage correction correct may not be fast enough for electronic loads because mechanical

voltage regulators must physically move components, their speed in correcting output voltage fluctuations is very slow. Mechanical AVRs measure correction time in volts per second so the larger the voltage correction required, the longer the correction will take. Large voltage corrections can take one-half second to tens of seconds – much longer than many modern electronic loads can tolerate.

Tap changing in the mechanical tap-changer generates arc in the contacts of the diverter switches. This arc causes contamination of the oil surrounding the diverter switches and also leads to the erosion of their contacts. Meanwhile, the whole tap changing process in the mechanical tap-changer is basically performed mechanically. Therefore, in the mechanical tap-changers the conditions of oil, contacts and mechanical moveable parts must be examined regularly and are serviced if necessary.

Tap switching voltage regulators tend to have higher maintenance requirements than magnetic induction units since the magnetic induction voltage regulator has few or no brushes or contactors to wear out. With either type, the maintenance requirements are directly related to frequency of voltage correction – the more it moves the more maintenance will be required.

Because maintenance on utility, oil-filled on-load tap changers can be quite expensive, they often have time delays and other capability built into their controls to minimize the frequency of tap changing. These units typically have recommended overhaul intervals ranging from 500,000 to 1,000,000 operations.

In power quality applications, it would be counterproductive to have delays or other limitations on the operation of tap switching or servo induction voltage regulators. Fortunately, these units are usually air-cooled, smaller in size and relatively accessible compared to the utility OLTC.

The typical electronic tap switching voltage regulator works very much like the mechanical tap switching regulator – except that it replaces mechanical servo drives and brushes with solid-state semiconductor switches.

- Poor current overload capacity (except the series transformer design)

- More expensive than mechanical voltage regulators

- They suffer from much higher steady-state losses

The principle drawback of electronic voltage regulators is the limitation imposed by the SCRs or other power semiconductors. FPS voltage regulators as well as double conversion and UPS units can fail in a matter of hours or days when put in an application with high inrush or overload currents – exercising due precautions such as sizing for the peak currents.

In this project we use combination of mechanical and semiconductor switches to ensure low steady state losses and to provide an arc-free tap-changing process.

II. PROPOSED SYSTEM

Design of the Proposed OLTC System

The figure 3.1 represents the block diagram of the proposed system. In this the supply side consists of transformer which has taps. No-load switches are connected to each taps. Then a hybrid switch which consists of both mechanical and electronic switches. The current and voltage measured or sensed from the output is used to change the taps. The tap changing helps to control the voltage without exceeding the specified limit. The voltage and the present tap is displayed by the LCD display.

OLTC Design Using No-Load Switch & Hybrid Switch

Eleven different OLTC topologies using conventional two winding transformers and autotransformer were compared on the basis of the voltage and current ratings of the transformer and tap switches and isolation requirements. The OLTC topology shown in Fig. 5.2 with an autotransformer having taps on the load side was chosen as the most suitable. The choice was made on the optimal requirement of component power ratings, isolation needs, and copper savings.

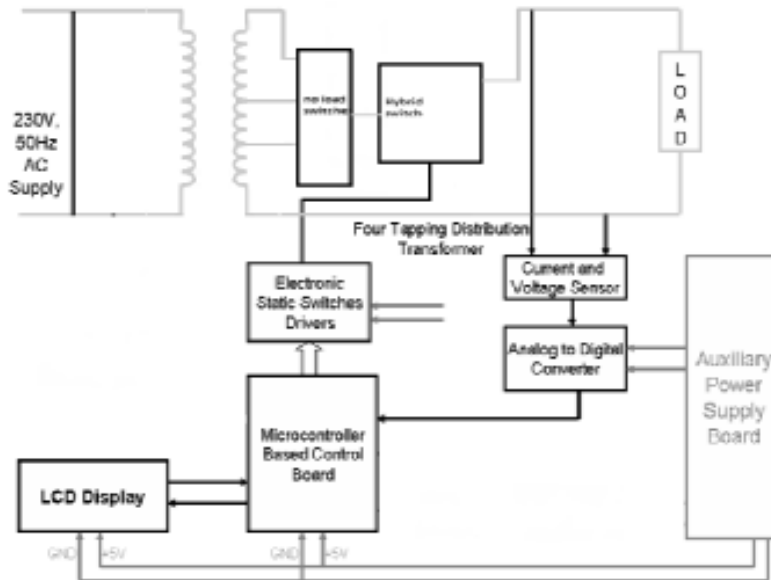


Figure3.1: OLTC autotransformer using no-load switches (NL1, NL2) and hybrid switch made of two electronic switches BS1,BS2 and a mechanical switch M.1

The use of an autotransformer saves on material and cost, and the throughput power is approximately ten times the transformed power. The autotransformer turn ratio of input to output is 10:11. If the rated input voltage is 1 p.u., then the taps are present on the section of windings from 0.9 to 1.1 p.u. Ten taps are present each of 0.02-p.u. voltage and, thus, the OLTC can provide up to $\pm 10\%$ compensation.

A combination of no-load switches and a single hybrid switch is used to realize the OLTC mechanism. A no-load switch is a mechanical switch that opens or closes under no load. By operating it under no load, it does not have any arcing phenomenon occurring. The idea is derived from —diverter switch—type voltage regulators shown in Fig. 5.3. Here, two movable no-load switches referred to as —selector switch—are used to select the taps and a mechanical —diverter switch is used for the tap-change process and for carrying the load current in steady state.

Each tap of the autotransformer is connected to a no-load switch, and alternate no-load switches are connected to each other—shown by red and green taps. The taps are, in turn, connected in series to the hybrid

switch. For the normal operation of the OLTC, the following conditions are imposed:

- 1) Mechanical switch conducts the load current in steady state, and bidirectional electronic switches Bs1 and BS2 are used for the tap-changing process.
- 2) At any point of time, only one no-load switch amongst green or red will be closed. This is to prevent the occurrence of a short circuit between the taps and ensure that the maximum voltage that the no-load switches will block in the OFF condition is 0.2 p.u.

3) Tap changes are always made in steps of one. This means that if tap 2 is ON, then a tap change can be made only to tap 3 or tap 1. This guarantees that the maximum voltage across the hybrid switch BS1, BS2, will be equal to the voltage of one tap (i.e., 0.02 p.u.).

The tap-change process through the hybrid switch, when we move from the tap corresponding to NL1 to NL2 is done through a 7-step mechanism illustrated in Table 1.1, the ON condition of the switch is indicated by —1|| and OFF by —0|| For the position of switch M, when it is connected to BS1, it is indicated by —1||, when connected to BS2 by —2|| and by —0|| when it is not connected.

- 1) wye connection with star-point floating;
- 2) closed-delta connection;
- 3) wye connection with the star point connected to line neutral(only for a three-phase four-wire system).
- 4) open-delta connection using two units.

The first two methods suffer from the drawback that the floating star point in wye can lead to erratic operation of the tap changer and overstress the winding insulation; while the closed-delta connection does not result in in-phase compensation and requires an extra unit compared to open-delta connection.

| STEP | NO LOAD SWITCHES | | HYBRID SWITCH | | |
|------|------------------|-----|---------------|---|-----|
| | NL1 | NL2 | BS1 | M | BS2 |
| 0 | 1 | 0 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 | 0 |
| 2 | 1 | 1 | 1 | 1 | 0 |
| 3 | 1 | 1 | 1 | 0 | 0 |
| 4 | 1 | 1 | 0 | 0 | 1 |
| 5 | 1 | 1 | 0 | 2 | 1 |
| 6 | 1 | 1 | 0 | 2 | 0 |
| 7 | 0 | 1 | 0 | 2 | 0 |

Star Connection for Three-Phase Four-Wire LV Network

It is typical for the LV distribution network to have a neutral available. Thus, three single-phase OLTC transformers can be connected between the phase and neutral in grounded Y formation with the start point of the transformer connection connected to the neutral of the Figure 3.1: Y connection of the OLTC transformers to a three-phase four-wire network. Three units regulate each of the three-phase voltages independently. ΔV_a , ΔV_b , and ΔV_c are the series-injected compensation voltages derived from OLTC.

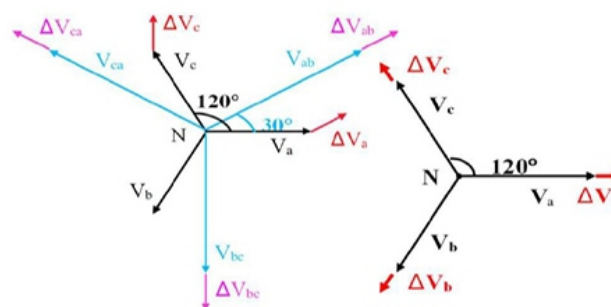


Figure3.2: Phasor diagram of series compensation in the MV (left) and LV (right) distribution network using open-delta and 31har connection, respectively. V_x is the phase voltage, V_{xy} is the line voltage, N is neutral, V_{xy} is the line voltage, ΔV_x is the series-injected compensating phase voltage, ΔV_{xy} is the seriesinjected compensating line voltage where, and refers to any of the phases a,b, and c.

Network as shown in Figure3.2. The points S,SL, and L correspond to those in Figure3.2. The compensating voltage is derived from the phase voltage and injected in/out of phase for positive and negative compensation, respectively. The main feature of the connection is that the three OLTC units can achieve independent regulation of each phase voltage. This is explained using the phasor diagram in Figure3.2 where are the phase and line voltage at the input of the transformer and Δ are the corresponding phase and line voltage that are series injected into the grid. The phase voltage after series compensation = (12)

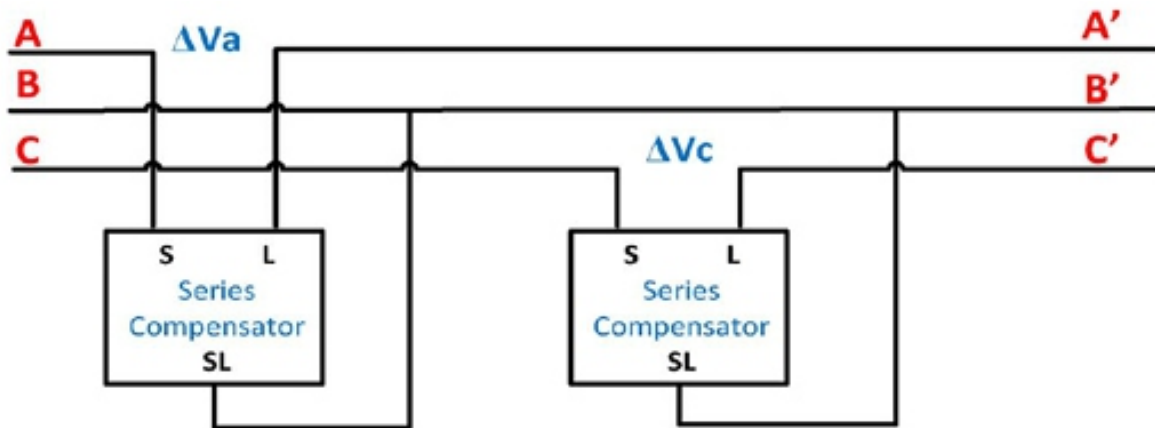


Figure 3.3: Open connection of OLTC transformers to a three-phase three-wire network. Open Delta Connection for Three-Phase Three-Wire MV Network

An innovative method for controlling the line-to-line voltage in a three-wire network using only two OLTC units is through an open-delta connection, shown in Fig. 6.3. The two units are connected between phase a-b and phase c-b using phase b as the common connection point. The injected voltages ΔV_a and ΔV_c are thus derived from the line-line voltages. Direct and independent regulation of the line-line voltages V_{ab} and V_{bc} results, while the compensation in, that is, ΔV_{ac} is the average of $(\Delta V_{ab} + \Delta V_{bc})$. During balanced operation ($\Delta V_a = \Delta V_c$), inphase compensation of all three line-line voltages occurs and during unbalanced operation, V_{ab} and V_{bc} experience inphase compensation while V_{ac} alone experiences a phase shift of up to 5°. The line voltage after series compensation is given by table 3.1

| LOAD VOLTAGE IN AC VOLTS | | TRANSFORMER OUTPUT VOLTAGE IN AC VOLTS | | RELAY STATUS | |
|--------------------------|-------|--|------|--------------|---|
| RLY1 | RLY2 | RLY3 | RLY4 | | |
| 24.4 | 23.46 | 1 | 0 | 0 | 0 |
| 22 | 21.6 | 0 | 1 | 0 | 0 |
| 14.3 | 19.5 | 0 | 0 | 0 | 1 |
| 16 | 21.2 | 0 | 0 | 1 | 0 |
| 20.8 | 20.15 | 0 | 0 | 1 | 0 |
| 21.9 | 21 | 0 | 0 | 0 | 1 |
| 20.49 | 18.8 | 0 | 0 | 0 | 0 |

III. SIMULATION RESULTS

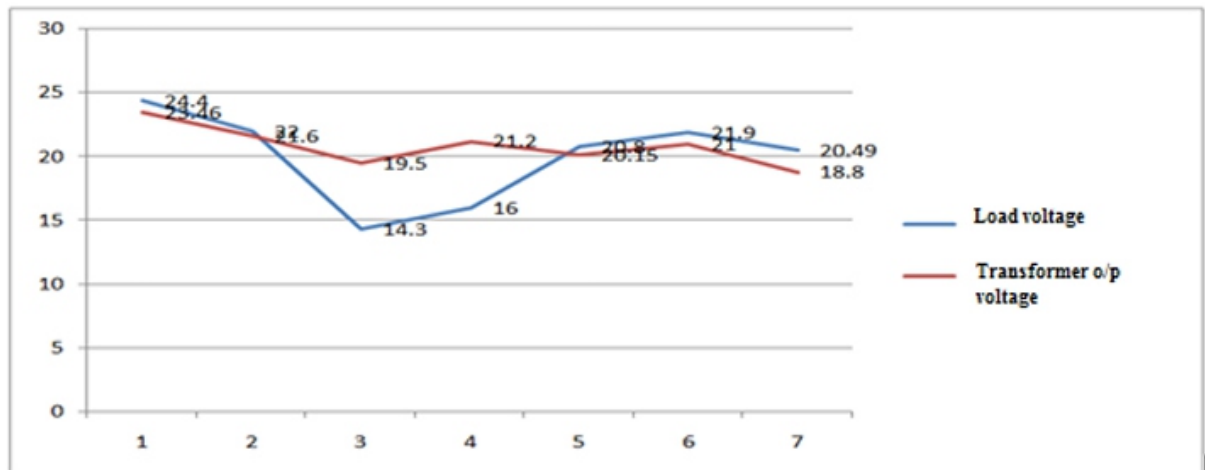


Figure3.4: Showing the regulation of output voltage with fluctuations in supply voltage

The graph shows the regulation of output voltage with fluctuations in supply voltage. The blue line represents the load voltage in volts and the red line represents the transformer output voltage. The load voltage and the transformer output voltage shows variations as time proceeds. The table 3.1 shows the values of output current and output voltage at particular values of input voltage. When the value of output voltage increases, the value of load current also increases.

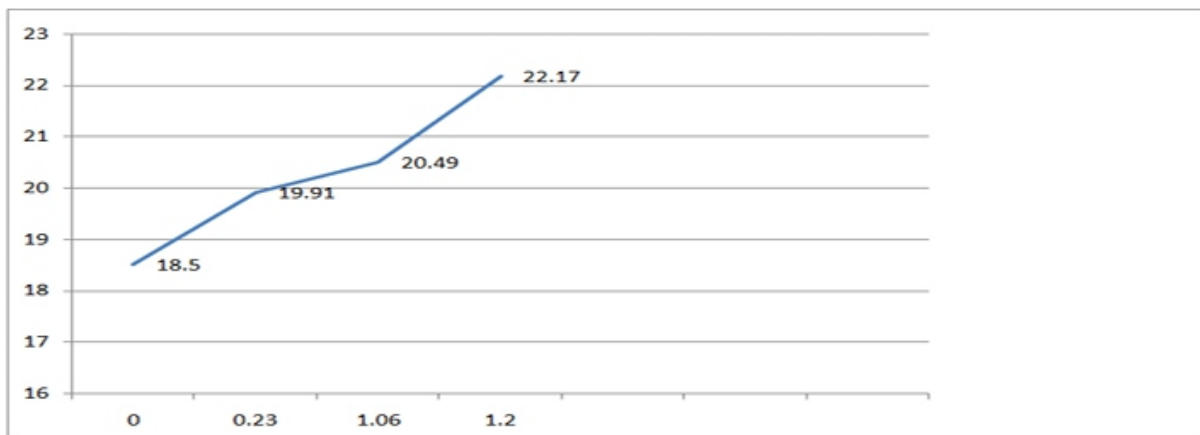


Figure 3.5: Showing current and supply voltage

The relation between output voltage and output current is almost linear. The output voltage increases as the increase in output current. From the observations, the output voltage is always regulated for any variations in input.

IV. CONCLUSION

Frequent voltage fluctuations and overvoltage are observed in the distribution network owing to large scale renewable energy integration, such as PV. A novel design for a power-electronic assisted OLTC autotransformer for tackling this problem in the distribution network has been proposed. The OLTC taps

were made from a combination of no-load switches and a single semiconductor-mechanical hybrid switch and exhibited several advantages.

The OLTC makes use of a mechanical switch during steady state and a semiconductor switch during tap change, resulting in the dual benefit of lower steady-state losses and no arcing during the tap change. This enables the OLTC to sustain a long lifetime when working in conditions of frequent voltage fluctuations. The OLTC can provide positive and negative compensation of the grid voltage. The use of no-load switches and the seven-step tap changing mechanism reduced the number of active switches from ten to one. The use of voltage polarity-based four-step commutation on back-to-back-connected MOSFETs provided a convenient method for performing a tap change without the occurrence of an open/short circuit and without the need for currentlimiting impedance.

A single overvoltage snubber connected

V. REFERENCES

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Balinese Latin Text Becomes Aksara Bali Using Rule Base Method

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ABSTRACT

Lontar is one of the cultural heritage which has information about history of Balinese civilization in the past away. Problems encountered today are that the lontar are not well maintained. While, the lontar that used as letter of Balinese alphabet will be worn out soon, because it doesn't have good endurance for long time. The exploiting of technology is one of media that can be used as a solution to solve the problems. The digitalization process of letter Balinese alphabet can be done by rewrite the script of that lontar in Balinese alphabet by using translation script with Rule Base and Levenshtein Distance Approach. The exploiting of technology will make the lontar becoming digital form and it won't be worn out when the lontar is kept safe for long time and information that consisted in lontar can be protected for long time.

Keywords: Transliteration, rule base, levenshtein distance, aksara bali.

Introduction

Aksara Bali (Balinese Alphabet) is a symbol visual system that showed in a media, it has function to uncover the elements that expressing a language(Sudarma et al., 2016). Based on the pronouncing, Aksara Bali (Balinese Alphabet) divided into some groups called warga aksara. This division is based by Sansekerta Panini's principle such as; warga kanthya, talawya, murdhanya, dantya dan osthya (Surada, 2007).

That's not easy for Aksara Bali (Balinese Alphabet) to hold in every development of new era. Lontar is one of traditional documentation media that has been endowed by the Balinese ancestors which has about all culture in Bali by using Aksara Bali (Balinese alphabet) as the mediator (Ginarsa, 1976). So that's why, the Aksara Bali (Balinese alphabet) that written in lontar must be protected. But, there will be a lot of challenge that should be faced in trying this preservation. One of them is limited financing by the government to take care all these documents. While, that lontar which is used as media of aksara Bali (Balinese alphabet) text doesn't have good endurance to keep for long time.

The exploiting of this technology is one of great media to be used in preserve the Balinese culture which has in lontar written in aksara Bali (Balinese alphabet), this is appropriate with S.K. nomor 179 tahun 1995 and circulation letter no 01/1995 that explained to the society in using aksara Bali (Balinese Alphabet) (Mahendra et al., 1996). Other than that, one of the efforts from the government in preserve the Balinese culture in form of lontar is by doing the translation the lontar from aksara Bali (Balinese alphabet) become text in Balinese language.

For preserving the Balinese culture in form of lontar is not enough if you translate all the lontar only. The real lontar which is written in lontars leaf in Balinese alphabet should be become modern. The step of Balinese alphabet being modern in that lontar is done by rewriting the result of lontar translation in Balinese language Latin text become Balinese alphabet in digital form or computerization. The result of rewriting process from Latin text in Balinese language become Balinese alphabet called translation

The same papers explain about translation had been done by using Syllabification Approach method (Joshi et al., 2013). In this paper, the method is used for solving the problems which is faced the similarity of two different languages. There are some other method that can be used for solving the translation problem, those methods are Rule Base, Decision Treedan Hybrid (Bhalla et al., 2013)(Kaur et al., 2014)(Kaur et al., 2012). There is a paper which do reviewing about the solving of translation process, in the paper is explained the great method for doing translation with structure case in different language called Rule Base(Kaur and Kaur, 2014). Based on the support of paper and problems in doing translation Latin text become Balinese alphabet, so this research uses Rule-Base method which combined with the application of spell character uses Levenshtein Distance method on preprocessing step. This combination method is used to decrease the level of mistakes, because there are some words in Latin of Balinese language which has homonym meaning, so that will often do mistakes in translation progress when using Rule Base method.

Need of the Study

Lontar is a Balinese cultural heritage which has information about the history of Balinese civilization in the past away. Till today, that cultural heritage still tries to be kept its preservation by the society although it start to lose the application and comprehension about letter of Balinese alphabet in Balinese's society from generation to the next generation. As time passes the lontar will be worn out soon, because it doesn't have good endurance for long time. This technology is needed to rewrite existing manuscripts lontar in digital form, so that the manuscript lontar can hold for a long time.

II. FUNDAMENTAL THEORY

Aksara Bali

Balinese alphabet is one of Balinese legacy by Balinese people which is valuable because it has so many culture values of society in Bali (Darma et al., 2015). The history of Balinese alphabet has close relation with the alphabet in India. Balinese alphabet is from India when Hindu and Buddha came to Indonesia (Sudarma and Surya, 2014). Aksara (Alphabet) can be meant as a visual symbol system which written on a media, it has function to shows the elements which express the language (Trieha, 2014). Based on its pronunciation aksara Bali (Balinese alphabet) is divided become some groups which is called warga akasara (Surada, 2007). Based on the Pesamuhan Agung which is done in 1963 that have decided kinds of letters which is made to write or presenting Balinese alphabet by Latin text (Sudarma and Sutramiani, 2014). Aksara suara is basically as same as vocal letter in Latin. Table 1 is aksara group which include in Aksara suara (Sutramiani et al., 2015). In Balinese alphabet (aksara Bali), Aksara Wianjana is also called consonant. Although, its written without vocal letter in the way of writing. Table 2 is the classification of Aksara Wianjana based on Warga Aksara.

Tokenizing

Tokenizing is a segmentation process or divide a text documents become token, it means the structure of characters which represent the words by tokenizer (Indranandita et al., 2011). Tokenizer divides a string into some tokens based on the certain characters. In tokenizing process, the characters usually divided as guidance for doing the segmentation sentence become token such as spasi, tab, new row (white space character). This is the example of tokenizing in the sentence “tiang sampun ngajeng”.

Input : tiang sampun ngajeng

Output : [tiang] [sampun] [ngajeng]

Rule Base

Rule Base method is a technique that used basic language rules in doing transliteration process (Kaur and Kaur, 2014). Other than rules, dictionary data is needed too for every word in two languages. So, every word is translated one by one, and then arranged again based on the basic language rule. The system depends on the linguistic knowledge. Their benefits are able to analyze till syntaxes level and semantic in deeply. The weakness needs good language knowledge and impossible to write the rule in all languages.

III. RESEARCH METHOD

Design and Implementation

Transliteration scheme system Latin text become Aksara Bali is arranged based on some steps, they are Latin text input process, saving the result of tokenization data, spell checker, transliteration and show the result of translation in Aksara Bali. Picture 2 is visualization progresses which happen in transliteration Latin text become Aksara Bali in block diagram.

Figure2: Block Diagram of System

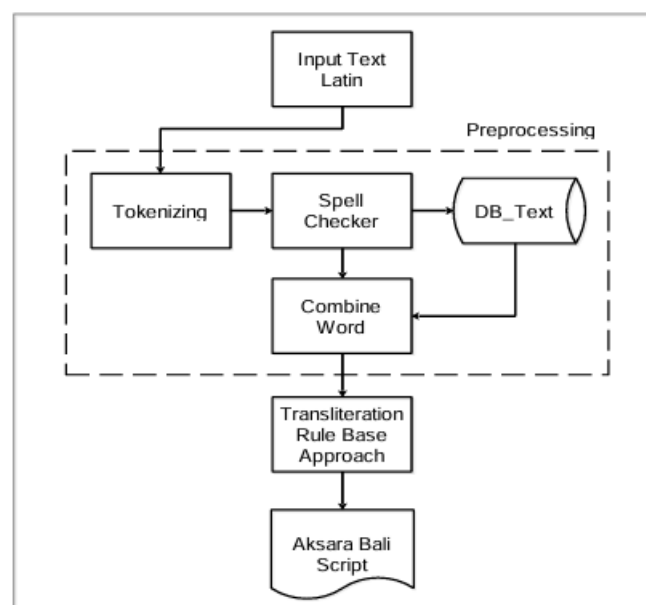


Table-1: Aksara Suara

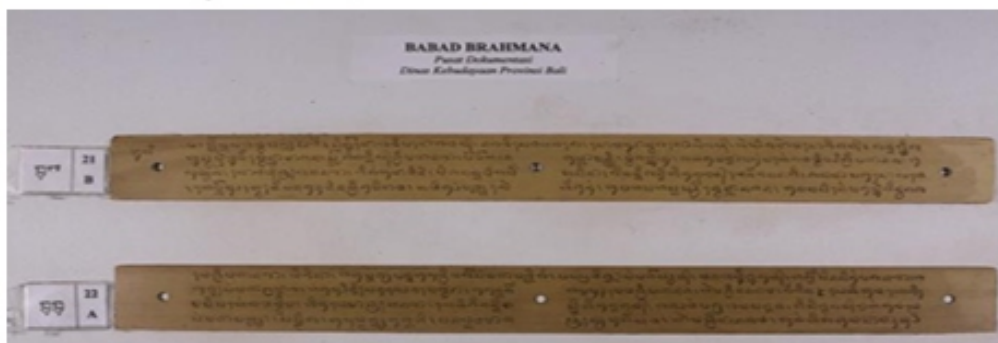
| Number | Balinese script | Latin script |
|--------|---------------------|--------------|
| 1 𑀓 1 | 𑀓 1 𑀓 1 𑀓 1 𑀓 1 | a |
| 1 𑀓 1 | 𑀓 1 | e |
| 1 𑀓 1 | 𑀓 1 𑀓 1 𑀓 1 𑀓 1 | i |
| 1 3 1 | 𑀓 1 𑀓 1 2 1 2 1 | u |
| 1 𑀓 1 | 𑀓 1 𑀓 1 𑀓 1 𑀓 1 𑀓 1 | c |
| 1 𑀓 1 | 𑀓 1 𑀓 1 𑀓 1 𑀓 1 | o |

Table-2: Aksara Wianjana

| Number | Balinese script | Latin script | Number | Balinese script | Latin script |
|--------|-----------------|--------------|--------|-----------------|--------------|
| 𑀓 0 | 𑀓 | h/a | 𑀓 𑀓 0 | 𑀓 | l |
| 𑀓 𑀓 | 𑀓 1 𑀓 1 | m | 𑀓 𑀓 𑀓 | 𑀓 1 𑀓 1 | n |
| 𑀓 𑀓 | 𑀓 1 𑀓 1 | c | 𑀓 𑀓 𑀓 | 𑀓 1 𑀓 1 | g |
| 𑀓 | 𑀓 | r | 𑀓 𑀓 𑀓 | 𑀓 1 𑀓 1 | b |
| 𑀓 | 𑀓 1 𑀓 1 | k | 𑀓 𑀓 | 𑀓 | ng |
| 𑀓 | 𑀓 1 𑀓 1 𑀓 1 | d | 𑀓 𑀓 | 𑀓 | p |
| 𑀓 | 𑀓 1 𑀓 1 𑀓 1 | t | 𑀓 𑀓 | 𑀓 | j |
| 𑀓 | 𑀓 1 𑀓 1 𑀓 1 | s | 𑀓 𑀓 | 𑀓 | y |
| 𑀓 | 𑀓 | w | 𑀓 𑀓 | 𑀓 | ny |

Lontar

One of the heritages from the ancestors in the Indonesia Archipelago is a text which is called lontar. Lontar (Java: ron tal, “daun tal”(tal leaf)) is siwalan leaf or tal (Borassus flabellifer atau palmyra) that had been dried. Lontar tree (Borassus flabellifer) is a kind of palma(palm) which grow in South East and South of Asia. In Indonesia Archipelago, the relic of lontar had been found in some area such as in Bali, Java, Lombok and Sulawesi. That Lontar is used as place for writing before paper (Sudarma, 2015).

Figure1: Capture Lontar Babad Brahmana

Other than Lontar, there was also another media which was used by our ancestors as writing media before paper like nipa's leaf, wood's skin and goat's skin. The old script is one of heritage by our ancestor which has important value. For now, The dominant old script which are in Indonesia are kept by a person and the other are kept in government instance.

Transliteration

Transliteration can be called as a progress of changing words in one language into the other language and still have the same structure (Kaur and Kaur, 2014). Transliteration can be as a words conversion progress which is written in one language into another language too by keeping the pronunciation. In this case, you will hear about transliteration and translation. Transliteration can be used to translate the meaning and the great technique from language, but translation will interpret from the text or communicate the same message from original language.

Tokenizing Process

Tokenizing progress which is done on preprocessing transliteration Latin text becomes Aksara Bali. In this progress, Latin text which is inputted will be read by system. When all texts have read by system then that texts will be divided into some groups and the space will be deleted. On the next progress, every words which have past the deleting the space progress will be given unique sign. That sign will be used to arrange word when there will be done the fixing text progress. When all the progresses have done well, all those words will be saved to go to the next progress.

Spell Checker

Spell Checker progress is done to do the checking homonym words which are in Balinese language. Spell checker progress will be done by matching every word in data base which is saved by the system. On the first progress will be done the initialization the total of words in the text which is inputted by the system. Those words will be inputted into Levenshtein Distance algorithm to do counting the space between source words and destination words in data base. The word which doesn't have space will be showed as suggestion word which become the purpose of the user and will be included with the meaning of that suggestion word by using direct mapping. The suggestion word can be meant as word that has more than one meaning or homonym, so, when it comes in to transliteration progress, there will not happen mistake in the Aksara Bali output. This is because of the writing of Aksara Bali, the word which notabene has same writing and may different result in Balinese language. Talking about spell checker, this progress will continue well from the checking word or checking the space of word by Levenshtein Distance method till all words which has inputted complete.

Levenshtein Distance

In this progress uses Levenshtein Distance in approach, which is done the equivalent in every word that input with word that is in transliteration database system. Every word that come into this progress will be faced with some treatments, those treatments which in Levenshtein Distance function are changing the character, increasing character and deleting character. In changing character operation, a character will be changed into other character. In increasing character operation will be increased character into string. In deleting character operation is done by deleting character in the string. Based on that condition, if the last word from the first text more or less from the second text, so it will be done the deleting and increasing string, if the string on the first text and second text has difference, so there will be changing progress. Those progresses will always recur till all string in second text which is equivalent come into Levenshtein Distance progress.

The result of every string equivalent function from the text which compared will has appropriate value with a lot of Levenshtein Distance function is happen in those second word, and if all string from equivalent word are same, so automatically there will be no Levenshtein Distance progress, so, the space between the words is zero(not)

Rule Base Approach

The main method in transliteration progress on this system is the using of rule base approach. Every character which is in user input will be done the checking by rule which has decided to change the Latin text Aksara Bali. When the first character come into rule base progress, that character will be done the checking for the first rule. When that character is not in the first rule, that character will be done the checking by the other rule in the system. When the Latin character has come into one of the rule which has prepared by the system, then that character will be saved in work memory, and it will be made become same with the next result of character.

IV. RESEARCH METHOD

White Box Testing

The White Box Testing in this research is done to know the result level of system to the function. This trial will be done by the application user by doing the transliteration progress Latin text to Aksara Bali. The system will be tested in every logic that done well like condition or repetition, whitebox trial will be done in spell checker process and transliteration in method rule base of condition or repetition and levenshtein distance method.

Table3: Flowgraph Rule Base Process

| No | Name of Process/Function |
|----|---|
| 1 | Input Latin text in Balinese language |
| 2 | Latin alphabet is not in rule |
| 3 | Latin alphabet is in rule |
| 4 | System doesn't write the result of transliteration alphabet |
| 5 | System writes the result of transliteration alphabet. |
| 6 | System gives addition attribute on alphabet for next transliteration alphabet |
| 7 | Done |

Table3 is flowgraph from transliteration process using Rule Base method, that the user will input Latin text in Balinese language, and then the system will do transliteration in every alphabet that consist in Balinese language Latin text to Aksara Bali form. These are the results of edge and node for this process; it can be seen in picture

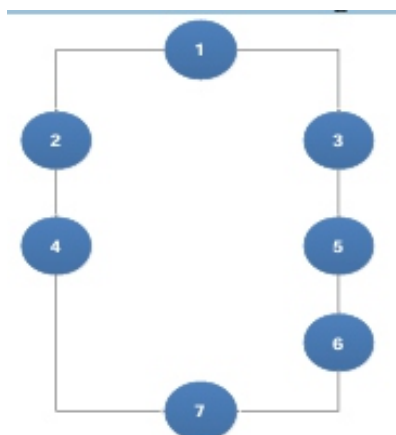


Figure3: Edge and Node in Transliteration Process

From edge and node in transliteration process that can be seen on figure 3, it can be formed into two ways or path which is in transliteration process such as 1 – 2 – 4 – 7 and 1 – 3 – 5 – 6 – 7 that will be tested on table4.

Table4: The Result Of Testing In Transliteration Process

| Path | The Output That Is Wanted | Output System | Explanation |
|------|--|--|-------------|
| 1 | The application doesn't write the result of transliteration Latin alphabet in Balinese language. | The application doesn't write the result of transliteration Latin alphabet in Balinese language. | Valid |
| 2 | The application writes the result of transliteration in Latin alphabet | The application writes the result of transliteration in Latin alphabet | Valid |

From table4 can be seen that all the transliteration process results valid hope to the output system which has been tested.

Testing of Transliteration

The next testing is about how the application which had been developed doing transliteration process by using Rule Base method. Figure 5 is figure from system which will be used for transliteration.



Figure5: Main Menu Interface System

In homepage of the application has some menu to support the transliteration process. For inputting the translation bundle of lontar uses open file menu.

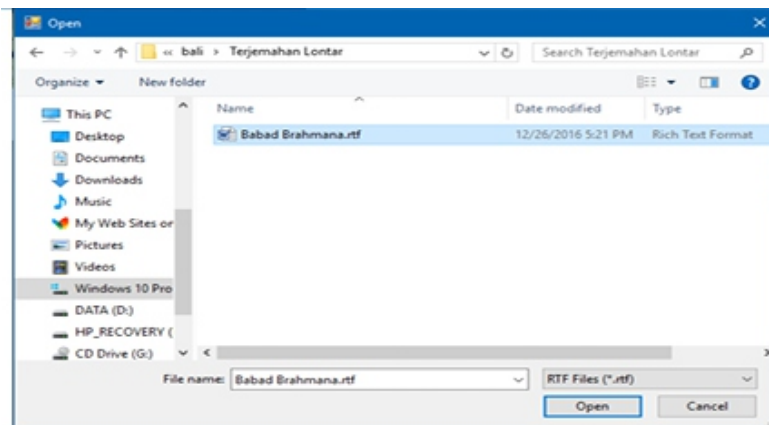


Figure6: Open Tranlation File of Lontar

After choose the lontar translation document which will rewrite in aksara Bali. So, the application will show the home page likes in figure 7.



Figure7: Import The Translation Text Lontar

In figure 7, Lontar translation text has been imported to transliteration application. The next step is doing the change process of aksara from translation lontar to aksara Bali by pushing transliteration menu.

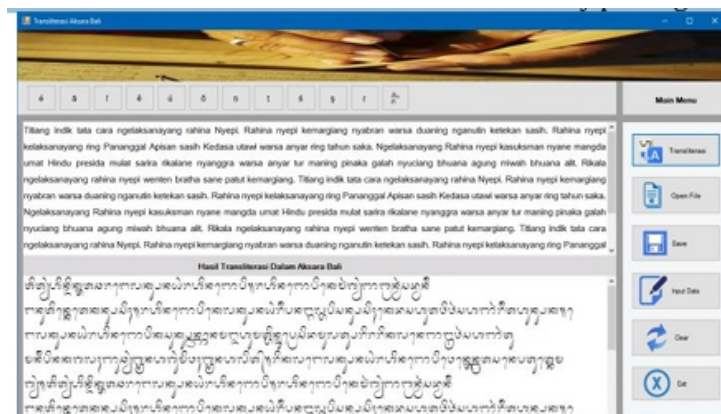


Figure8: The Result of Translation

In figure 8 is seen that the result of translation latin text in lontar has been completed to do transliteration or rewrite in aksara Bali form. To save the result of aksara Bali click save menu.

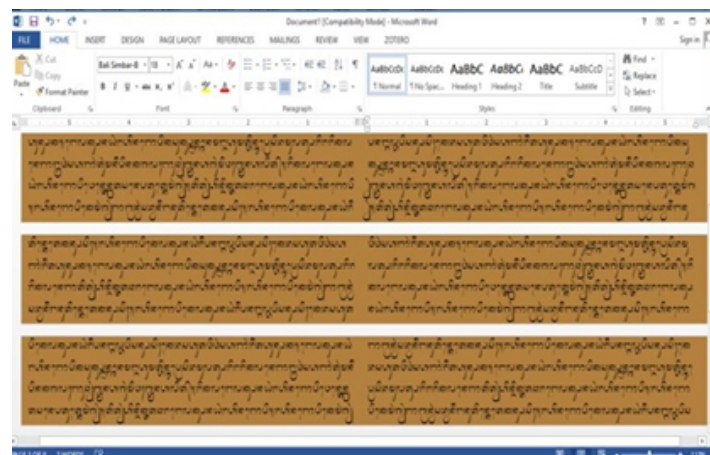


Figure9: The Result of Rewrite Lontar in Document Form

Figure 9 is the result of transliteration translation lontar document in aksara Bali. For the next the result of this document will be made same to the original document of lontar to assess the accuracy of transliteration application in using rule base method. In this testing is used 10 pieces of lontar documents to match with the result of transliteration documents. The result of that testing is the accuracy value which is produced from the result of transliteration by using rule base method and supported with levenshtein distancemethod is 90.67%. From the result has 9.33% incorrect, where the mistakes is caused of the words in Balinese language which are translated with special writing in aksara Bali.

V. CONCLUCION

The conclusion that based form the result which is got that transliteration application Latin text in Balinese language into aksara Bali by using Rule Base method is able to rewrite the transaltation of latin text of lontar into aksara Bali as like in the original lontar document with 90,67% accuracy. Based on the result of white box testing, all the necessity which are in the system have been filled or fulfilled from the system. The next study can be done the addition word data bank in Balinese language which has special writing in aksara Bali or making the best method for higher result.

Limitations

One shortcoming in this research is when words in the manuscript lontaruse special characters and these words are not listed on the system database then the system will be wrong in representing Balinese script transliteration.

Future Enhancement

The next study is requires more definitions of words with special Balinese characters for transliteration acceleration to have a higher percentage.

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Recognition of Impact of Emotional Labour on Quality Service Delivery: A Study of Some Hotels in South East Nigeria

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ABSTRACT

The main objective of this study was to investigate the extent to which managers and service employees of hotel organizations in Nigeria have recognized emotional labour as a critical factor in quality service delivery and customer satisfaction. We also investigated the relationship between emotional labour (surface acting (SA), deep acting (DA),) and service quality, and customers' emotional satisfaction. Data were gathered by the use of structured questionnaires designed in Likert format, and interviews. The focus groups were customer-contact employees, managers and customers of the selected hotels. Data analysis was conducted using SPSS 17.0 software. Formulated hypotheses were tested using regression and Correlation methods, analysis of variance (ANOVA), Z-test and t-test for tests of significance. Analysis revealed that emotional labour (SA, DA) was found to have significant relationship with service quality, and customers' emotional satisfaction. While SA has negative relationship with the above variables, DA has positive relationship. In the 1 to 3-star hotels, service quality and customer satisfaction were found to be low and below expectations. Employees of different grades of hotel perceive and perform emotional labour differently. It was observed that emotional labour as a construct is unfamiliar to service employees hence, they have not accorded adequate recognition to emotional labour as critical factor in quality service delivery. Our conclusion is that performance of emotional labour has significant impact on service quality and customer satisfaction. The realities of emotional labour are not yet clearly understood by majority of hotel employees and managers in the selected hotels. The implication is that the emotional demands of frontline jobs and their emotional contributions towards sustainability and economic success are not appreciated. Above findings have serious human resource implications for the hotel industry in Nigeria. We recommend that hotel organizations should re-design and plan the emotional content and context of their human resources practices to reflect the crucial role emotional labour plays during service encounters.

Keywords: Emotional labour; Emotional satisfaction; Service encounters; Service quality.

Introduction

In a business environment of heightened consumer expectations, and stiff competition, tourism and hospitality organizations look for ways to excel in service quality, customer satisfaction and loyalty, competition, and performance. In the hotel industry, successfully satisfying customers' needs and wants is much more than providing room and/or board no matter the class of the establishment. It requires humanist aspect of high standard.

In the hotel industry, face-to-face transactions have the greatest power to make an impression on the guest. Here the customer/guest can undertake a full assessment of people, their manner, appearance and general behaviour. Therefore, the personal contact that takes place must be of superior quality. The

should be able to empathize with the customers; put up friendly and cheerful face at all times in a way that is not going to be seen as just an act, but seen to be or at least appear sincere (Power, 1992). The service employee must deliberately involve his/her feelings in the situation. He must perform emotional labour.

Emphasis should be on guest's total experience. Customer experience includes interactions with an organization's people, processes or systems; feelings or emotional responses generated by the interaction (Thompson, 2007). Customer experience is the most important factor in gaining customer loyalty (Brandi, 2006). Service experience is therefore, an essential element in the transaction.

The skill with which emotional labour is performed impacts on perception of service quality (Provis et al, 2003; Parasuraman et al, 1988). The handling of difficult and unruly customer requires the active suppression and/or masking of one's own emotion while simultaneously expressing an alternate emotion. The service worker is expected to be upbeat and positive in the face of criticism and complaints (Provis et al, 2003). He is expected to wear cheerful face, beaming „professional smile“ no matter the situation.

Jobs in the hotel/hospitality sector are particularly vulnerable to emotional labour demands as they are characterized by an underlying expectation for employees to display a positive disposition, even when faced with situations that normally elicit negative emotional reactions such as being impatient, over-demanding or irate customer (Hoel and Einarsen, 2003; Pizam, 2004). Hospitality service environment is so challenging some of the customers arrive at the establishments with negative emotions while attempting to run away from unpleasant situations encountered at their homes, workplaces, society etc. Many a time, these customers use hotel workers as inanimate objects (scapegoat) for venting their frustration.

Thus, customer service work is increasingly trying. To manage emotional labour, managers must hire employees who can cope with the stress caused by dealing with difficult and awkward customers. Emotional labour must be managed on a day-to-day basis and at any point of encounter (moment-of-truth) between service employee and the customer. Every hospitality/hotel organization experiences "moment-of-truth" in thousands every day. The way a manager/employee perceives and recognizes his job content has a great influence on how he performs his job.

In the hospitality/hotel industry, it is not unusual to hear service employees complain of customers being awkward, over-demanding, and abusive (physically, verbally), difficult, angry, aggressive, unruly etc. It is also not unusual to hear customers complain of service workers being rude; abusive, unresponsive, snobbish etc. Sometimes, it is observed that service workers argue with customers. The researcher in this study was privileged to have personally observed such complaints as mentioned above from both staff and customers, and arguments between guests and employees while working in the hospitality establishments as a manager. Such scenario described above indicates possible lack of emotive work skills and non-recognition of the realities of emotional labour and the importance of emotion regulation required during service encounter. This points to the fact that performance of emotional labour, a critical factor in the delivery of quality service and customer satisfaction has not been properly addressed. Problems relating to emotional labour are human resource issues that deserve serious attention and this is the main reason that necessitated this study.

Objectives of the study

The main objective of the study was to determine the extent to which managers and employees of hotel organizations have recognized the realities of emotional labour, its role in the delivery of quality service and customer satisfaction. The study also examined the relationship between employees performance of emotional labour (surface acting and deep acting), service quality and customer satisfaction. The study investigated if differences exist in perception, recognition and performance of emotional labour between and among various grades of hotel (1-star to 5-star).

Research Questions

To guide the study, three research questions were formulated as follows:

1. Have the managers and employees of hotels recognized emotional labour to a great extent as a critical factor in quality service delivery and customer satisfaction?
2. Is there significant relationship between performance of emotional labour (SA; DA) and service quality and customer satisfaction?
3. Do significant differences exist in perception, recognition and performance of emotional labour between and among various grades of hotel (1-star to 5-star)?

Statement of hypotheses

For the purpose of guiding the study, three (null) hypotheses were formulated as follows:

1. Managers and employees of hotel organizations have not significantly recognized emotional labour as a critical factor in delivery of quality service and customer satisfaction.
2. Employees' performance of emotional labour (surface acting; deep acting) has no significant relationship with quality service delivery and customer satisfaction.
3. Significant differences do not exist in perception, recognition and performance of emotional labour between and among various grades of hotel (1-star to 5-star).

Significance of the Study

A study of this nature has practical significance in many aspects. This work would further broaden our vision, knowledge and understanding of the topic, bringing to the surface the characteristics, subtleties and centrality of emotional labour in service excellence particularly in Nigeria and some other countries where emotional labour has long been neglected. As at the time of this study, there was no direct evidence that a study of this nature has been conducted in Nigerian hotels. The study reveals how differently each grade of hotels treats emotional labour. Understanding of the attitudes and behaviours of front-line workers towards their work and customers will help management come to terms with the overall experiences their customers have with their employees they deal with on any transaction. Paying adequate attention to such a construct as emotional labour and adopting appropriate management strategies by operators would improve employees' attitude, behaviour and service quality. It is essential that organizations are also aware of the emotional labour demands of their service employees so that they can find ways to provide support to their workers and help them deal with the impacts of emotional

labour demands of their service employees so that they can find ways to provide support to their workers and help them deal with the impacts of emotional labour. The service workers need to be adequately prepared bearing in mind that during service interaction the manager may not have the opportunity to shade away or re-call defective service.

II. BRIEF REVIEW OF RELATED LITERATURE

This sub-section of the work deals with a brief review of related literature covering the relevance of emotional labour in service encounter, and customer satisfaction.

Emotional Labour in Service Encounter

Emotional labour is at the heart of service, and quality service is the lifeblood of the industry (Davidoff, 1994; Ligander and Straudvit, 1997). Service is the critical area for competitive differentiation and the level of service quality is the key factor in determining customer satisfaction and overall customer loyalty (Enz and Siguaw, 2000; Johnson and Woods, 2008). In the lodging industry, it is a serviceexcellence focus that is the source of any sustainable competitive advantage. A key component of the service excellence focus is the moment of customer-provider interaction. Consequently, a key aspect of the work performed by most workers in the hospitality is the display of organizationally-sanctioned emotions (Davidoff 1994).

Hochschild (1983) sees emotional labour increasingly relevant, given the particular demands of service jobs. These jobs depend heavily on workers' ability to manage their emotions and that of others (Wharton, 2009; Kruml and Geddes, 2000; Wu and Yuan, 2012). Performance of emotional labour poses a serious challenge to service workers. Part of the challenge is that service workers must often conceal their real emotions when guests give them a hard time, and they must continue to smile through negative feedback from guests (Chu and Murrmann, 2004).

Empirical studies confirm the significance of emotional labour in the encounter. This perspective shared by Grandey (2000); Ashforth and Humphrey (1993); Morris and Feldman (1996) further explains the role of emotional labour in service industries. Their common perspectives are:

- a) That emotions play critical role in the delivery of service excellence and customer loyalty and
- b) That organizations ensure this delivery of quality guests' service most often by implementing organizational display rules, which serve as guide for appropriate employee behaviour in every interaction with the guest.

The service management literature provides us with four factors that make emotional labour relevant to the service encounter (Ashforth and Humphrey, 1993). Firstly service workers are at the customer-organization interface and represent the organization to the customer. Secondly, service transactions usually involve face to face transaction between service workers and customers. Thirdly, because of high uncertainty in the encounter created by customer participation these encounters have a dynamic and emergent quality. Fourthly, due to the intangibility of the services offered in the encounter it can be difficult for customers to evaluate service quality. Taking these four factors into account, emotion has significant potential for impacting on services encounter – through emotional interactions.

The relevance of the effective performance of emotional labour in service encounter is further demonstrated in relation to customer's perception of service quality. Ferguson, Bulan, Erickson and Wharton (1997) suggest that the primary task of workers who provide high quality service is not to produce material good; but to produce speech, action, and emotion that symbolize one's willingness to do for the client or customer. This is consistent with the service management literature that the social interaction of an exchange and the physical environment in which it occurs are used by consumers as service quality cues (Grove and Fisk, 1989; Anderson et al, 2003).

In the hospitality/hotel industry, managing emotions (showing happiness and empathy, not fear, or anger) Is an important facet in customer retention strategies. Managing emotions results in good customer performance (Ashforth and Humphrey, 1993). Emotional expressions such as smiles and friendly comments can lead to good work performance (Grandey, 2000). Aldermann, (1995); Pugh, (1998) found a positive relationship between emotional displays of bank tellers and customer satisfaction. This study suggests that positive emotional expressions will result in higher customer service performance.

Moi and Dean (1999) concluded from their study that service quality is represented by three dimensions in the hospitality industry, namely, employees (behaviour and appearance) tangible and reliability. The best predictor of overall service quality is the dimension referred to as „employees“. This study confirms employee behaviour as a critical factor in service excellence.

Langhorn (2009) examined the influence of emotional intelligence and emotional labour on the quality of service offered by servers in the restaurant. Among others, the key findings of this study are that there is a positive relationship between the emotional expression of the customer and a range of service cues; and that the emotional competences of the server are positively related to the positive emotional expression of customers in regard to a range of service cues. Based on the findings of the study, Langhorn recommends that service organizations need to plan the emotional content and context of their operations or brands and decide how the environment and personal interactions will look and feel in pursuit of that design.

The implication of the above findings is that if the service provider serves with smile, the customer will equally smile, while on the other hand if the service provider is grumpy and heavy-handed, the customer will be unhappy. These findings support the findings of Pugh (2001) on emotion contagion which suggest that exposure to an individual expressing positive or negative emotions can produce a corresponding change in the emotional state of the observer.

According to Lee (2009) emerging research on customer loyalty shows that an organization's success is closely linked to its ability to create the kind of exceptional customer service experience that leads to repeat business. If service workers are angry, demoralized or just plain disinterested, no amount of training will affect the service climate this emotional state creates. Customer service research shows that 68% of customers defect from a firm because they were treated with an attitude of indifference (Lee, 2009). Thus, 68% of what leads to customer defection is related to emotion – or in this case, the lack of emotion. The connection between emotional labour and customer service is obvious, thus, the economic consequences of not addressing customercontact employees' emotions can be disastrous to an organization

Customer Satisfaction

Customer satisfaction depends on a product's perceived performance in delivering value relative to buyer's expectations (Kotler et al, 2006). If the products performance falls short of the customers' expectations, the buyer is dissatisfied. If performance matches expectations, the buyer is satisfied. If performance exceeds expectations, the buyer is delighted. The customer-centered firm seeks to deliver high customer satisfaction relative to competitors. For customer-centered firms, customer satisfaction is both a goal and a major factor in the survival and economic success (Kotler et al, 2006).

Customer satisfaction is defined by Anderson et al (1997) as an "overall evaluation of a firm's products or services." As demonstrated by researches in service management, the development of long term relationships between customers and service providers is also influenced by social aspects (Goodwin and Gremler, 1996). Employees' handling of interactions with customers strongly influences the level of commitment a customer develops towards a service provider. The level of satisfaction the customer experiences with the services provided also contributes to the customer's commitment to the firm (Hennig-Thurau et al, 2002). Based on findings from studies, it is argued that customers have expectations with regard to the behaviour of service employees in interaction situation and that, when these are exceeded, the level of customer satisfaction with the service provider is positively influenced.

Increasingly companies are realizing that emotion regulation during employee-customer interaction is the core of a service experience that influences customers' perception of service quality that leads to satisfaction or dissatisfaction (Chu, 2002). For example according to Chu (2002:7), in the employee handbook of a deli store, two of the items in the company's mission statement made clear how important customer satisfaction is to the company's economic success and how employees behaviour affects customer satisfaction;

As the role of emotion is gaining attention as a central element in service quality management researches on the effects of emotions on satisfaction with service quality are being conducted. Recent studies suggest that emotion is a fundamental attribute in satisfaction and that customer's satisfaction should include a separate emotional component (Gonin et al, 2000; Wong, 2004). Liljander and Strandvik, (1997) argue that customer satisfaction includes both affective (emotional) and cognitive components. These authors found that negative emotions have a stronger effect on satisfaction with quality than positive emotions.

Wong (2004) reports relationship between emotion and customer behaviour, which support previous findings of Bagozzi et al, (1999), Liljander and Strandvik, (1997); and relationship between emotional satisfaction and customer loyalty which supports findings by Bitner et al, (2000). Research evidence shows that dissatisfaction with service encounters can lead to an array of behaviours that have negative impact on organization particularly its bottom-line (Kennedy, 2008). Research evidence also shows that anger and other related negative emotions are heightened during service failure and recovery encounters.

III. RESEARCH METHODOLOGY

This section presents the methods used in the study. It deals with the following: research design, description of the study population, sample size determination, data collection instrument, and its

administration, test of validity and reliability, and method of data analysis. This study is a descriptive research; hence, a survey method was adopted. Descriptive data are typically collected through a questionnaire, an interview, observation (Gay, 1976) and recorded events and documents.

Population of the study and Sampling Procedure

The population for the study comprised of both junior and senior staff of hotel establishments in the South-Eastern zone as well as customers of the selected establishments. Hotels of one (1) to five (5) star classification were used in this study. A total of thirty one (31) hotels were selected for the study. The total population for the senior/management staff and service employees were 122 and 441 respectively.

A non-probability sampling method was adopted in choosing the establishments for the study. In this study stratified sampling was used to determine individual company's sample size with regards to customer service employees and managers. By applying the stratified method, and using the Bouley's (1964) population allocation formula, we determined sample size for each hotel. In this study random sampling method was used to select the customer-contact employees and managers. From each establishment, respondents consisted of male and female staff that has at least two years work experience in the industry. Due to the heterogeneous nature of the study population, the Taro Yamane's formula given by Alugbuo (2005) was used to determine the sample size from the hotels selected for the study. Applying this formula, sample sizes for customer-contact employees and managers were 210 and 94 respectively. In each company, the Bouley's (1964) population allocation formula given by Okeke (1995) was used

Sample Size Determination for Customers

Customers of the selected hotels were chosen using random sampling method. In social science research where simple random sampling is involved, the sample size determination can be determined by employing the probability proportional to size (PPS) sampling method (Nyariki, 2009). The sample size is calculated using a standard formula, given by Freund and Williams (1983). Thus, sample size for customers of the selected hotels was 81.

Data Collection Instrument and Administration

The primary data in this study were collected through structured questionnaires and oral interview. In this study, the Likert-type scales were used. According to Gay, 1976; Kerlinger, 1973), a likert scale asks an individual to respond to a series of statements by indicating whether he or she strongly agrees (SA), agree (A), undecided (U), disagree (D), or strongly disagree (SD) with the statement. Each response is associated with a point value and an individual's score is determined by summing the point values for each point value; 4, 3, 2, 1 and 0 were assigned to strongly agree (SA), Agree (A), disagree (D), strongly disagree (SD) and not applicable (NA) respectively to positive responses to positive statements. For negative statements the point values were reversed, strongly agree was assigned one (1).

Likert scaling is a bipolar scaling method, measuring either positive or negative response to a statement (Hall, 2010). When a four-point scale is used by eliminating the middle option of "undecided or neither agree or disagree", it is referred to as a forced choice method. In this study the forced choice method was adopted to minimize central tendency error.

Designing the Research Instrument

In this study some already developed, pre-validated and reliable scales were adapted in addition to scales developed by conducting pilot studies and extensive literature search. Attitude statements for the study were generated through in-depth interviews and discussions with the operators of the industry (focus group) and lecturers in the field of hospitality. Validity and reliability tests were conducted for the modified scales. The questionnaires were designed following procedure described by Hall (2010).

At the end of the attitude statement generation and questionnaire designing exercise, three questionnaires emerged; one for customer-service employees, one for supervisors and managers and one for customers. These questionnaires are presented in the Appendix – B. The Cronbach's alpha coefficient for internal consistency was used to determine reliability of the research instrument. Procedures described by Gliem and Gliem (2003) and Onunkwo (2002) were adopted.

Emotional labour scale developed by Brotheridge and Lee (1998) was used. The scale is composed of sub-scales that measure dimensions of emotional labour – the duration and frequency of customer interaction, the surface acting (SA), deep acting (DA), and emotional dissonance. The Deep Acting sub-scale assesses how much an employee has managed his feelings to comply with display rules while the Surface Acting, sub-scale measures the extent to which the employee has to express emotions that are not felt. Brotheridge and Lee (2002) report high coefficient alpha for DA and SA sub-scales as .89 and .80 respectively. Naring, Briet and Brouwers (2007) report alpha coefficient of .79 and .81 for SA and DA respectively. Groth et al (2009) report alpha coefficient of .90 and .92 for DA and SA respectively. The sub-scale for emotional labour job recognition in this study had a reliability coefficient alpha value of .87.

Questionnaire for Customers

The questionnaire for customers has two subscales, one measuring overall perceived service quality and the other measuring emotional satisfaction experienced by the customers. It is presented as Appendix C. A four-item overall service quality scale developed by Dabholkar, et al (2000) and reported by Wong (2004) was employed. Cronbach's alpha coefficient of reliability for this component measure of overall service quality was .94 (Wong, 2004).

To capture emotional satisfaction, the measure adopted by Reynolds and Beatty (1999) reported and used by Wong (2004) was adapted. The composite reliability coefficient for the emotional satisfaction sub-scale was .86. Customers were asked to indicate their feelings with respect to the quality of service.

The questionnaire for managers and supervisors has two (2) sub-scales measuring: (1) extent of managers' knowledge and recognition of the realities and importance of emotional labour in service excellence, and (2) their perception with regards to how customer-service employees perform emotional labour in their respective organizations. Validity and reliability tests were conducted. Reliability coefficient (Cronbach's alpha) for these sub-scales was 0.86 and 0.77 respectively.

Data Analysis Techniques

Descriptive statistics for the study variables were determined. This involved calculating mean scores, mode, standard deviation and simple percentages for each attitude statement and sub-scales. Data were also presented in frequency distribution tables. Inter-correlation coefficients were determined for the study variables using the Spearman rho correlation model. The Spearman rho is appropriate when the data present an ordinal scale (non-parametric correlation (Gay1996). The model is used for multiple ordered response categories which include bond ratings, opinion surveys with responses ranging from strongly agree to strongly disagree.

IV. DATA ANALYSIS AND RESULTS

In this sub-section we present and interpreted data collected from the field work. Also presented in this chapter are discussions of research findings. Results of analysed data were presented in frequency distribution tables. Analysis of data was conducted using (SPSS 17.0) regression, ANOVA, Pearson r and Spearman rho correlation models, Z and t-statistics. Tests of significance at $p = 0.05$ were equally conducted. Means, modes and standard deviations were calculated for each sub-scale and according to star classifications (i.e. 1 to 5- stars).

Data gathered in this study were presented in this order: customer-contact employees' responses, customers' responses, and managers' responses. Descriptive statistics for these responses are presented in Appendix B for Tables 4.1, 4.2, and 4.3.

As observed from the Table 4.1, service workers in the 1-star hotels use surface acting much more frequently than others. While those in the 5-star use it less frequently than others. The mean score and mode for 1-star were 3.45 and 3 respectively, meaning that the employee use surface acting often times during service interaction. For the 1, 2 and 3-star hotels, (mean = 1.68, 1.87 and 2.09 respectively, and mode = 2) the implication is that their employees rarely use deep acting as strategy for managing emotional labour during service encounter. For the 5-star hotel class (mean and mode = 2.53 and 3 respectively), their service employees often times use deep acting during service encounters. In this regard any mean from 2.5 and above indicates that emotional labour is recognized. A mean between 3.0 and 3.5 indicates that often times emotional labour is recognized as an important element in quality service delivery. The mean score for this variable ranges from 1.24 to 2.33 for the 1 to 5-star classes. The mode for 2 to 5-star classes was 2. A score of 2 indicates rarely.

Customers Responses

Descriptive statistics for customer's responses with regards to service quality and emotional satisfaction are presented in Table 4.2. Any mean below 2.5 indicates that the quality does not meet expectation and is not acceptable. Any mean between 2.5 and 3.0 denotes acceptability, any mean between 3.0 and 3.5 indicates that quality exceeds requirements and a mean above 3.5 denotes outstanding quality. Generally, as the mean score goes up, the higher the extent of what the scale measures. Customer's emotional satisfaction was very low in the 1-star, low in the 2 star hotels, fairly low in 3-star hotels. For 4 and 5 star hotels, their customers derive high level of emotional satisfaction (means = 2.50 and 2.57, for 2 and 3-star hotels respectively).

Descriptive statistics with regards to how managers and service employees perceive and recognize emotional labour as a critical element in service excellence are presented in Table 4.3. Any mean below 2.5 indicates that emotional labour is not recognized as an important element in quality service delivery. That is, the respondents disagreed to its importance as a critical element in quality service delivery. A closer look at these data revealed that managers of four (4) and five (5) star hotels with mean of 2.52 and 2.57 have recognized emotional labour (EL) as a critical element in quality service delivery. Those managers in 3 star hotels (mean = 2.32) have fairly recognized EL as an important element in quality service delivery. It is only the 5-star that has a mode of 3 while others have a mode of 2 which represents disagreement to the importance of emotional labour in quality service delivery and customer satisfaction.

Descriptive statistics for observed level of performance of emotional labour by service employees are used to describe how efficiently and effectively the customer-contact employees perform emotional labour as observed by their hotel managers. Any mean score below 2.5 indicates ineffective and inefficient performance of emotional labour. The majority view in this regard is that the customer-contact employees are not effectively performing EL, particularly in 1-3 star hotels with mean ranging from 1.71 to 2.24. The mode for their response options was 2. In the five star hotels, customer-contact employees meet organizational requirements, (mean = 2.5, mode = 3). The four-star hotel class scored a mean 2.36 which is not significantly different from the expected mean of 2.5; meaning that the 4-star hotel class employees are meeting organizational requirements. The implication of the above analysis is that 1 to 3-star hotel employees are performing below expectation. For the 5-star class, at least 50% of the time they meet organizational expectations.

Testing of Hypothesis

In this section of the report the results of the hypotheses tested are presented.

Hypothesis1

This hypothesis stated thus: Managers and employees of hotel organizations have not significantly recognized emotional labour as a critical factor in delivery of quality service and customer satisfaction.

To test and ascertain if Management and service employees have recognized emotional labour as a critical factor in quality service delivery, test of significance was conducted in two parts. In the first part (b), managers' responses were tested while in the second part (a) responses of customer-contact employees were tested for each class of hotel separately. Having separated the scores into two parts, test of significance was conducted at $p = 0.05$, using Z-statistic. For the recognition of importance of emotional labour, the mean scores for 1, 2, 3 and 4-stars were 1.24, 1.65, 2.0 and 2.06 respectively. Test of significance conducted revealed that the means for 1 to 4-star hotels were significantly lower than 2.50. For 3 and 4-star hotels, Z value calculated was 4.74 and 4.35 respectively. For the 5-star the mean was 2.33. Test of significance revealed that 2.33 was not significantly lower than 2.5 ($Z = -1.56$) and customer-contact employees of the 5-star hotel class have recognized emotional labour as a critical factor in quality service delivery. The overall mean for customercontact employees was 2.18. Test of significance conducted revealed that 1.87 was significantly lower than 2.5.

Hypothesis2

Hypothesis 2 stated thus: There is no significant relationship between emotional labour and service quality and customer satisfaction. To test this hypothesis, regression analysis was conducted. The result revealed a significant relationship between emotional labour and service quality as our “p-value” for both cases of Surface Acting and Deep Acting against Overall Service Quality shows a lesser value (i.e. 0.000 for each) where the decision rule states that if $p\text{-value} \leq 0.05$, reject H_0 and accept the alternative (H_1). In this case, we are rejecting H_0 and concluding that there is significant relationship. The result also showed that surface acting does have a negative and weak influence on overall service quality (Pearson correlation (r) = -0.390. Coefficient of determination (r^2) multiplied by 100 gives 15.2%. While deep acting does have a positive and weak influence on overall service quality (Pearson correlation (r) = 0.201. Coefficient of determination (r^2) multiplied by 100 gives 4.0%

The result of the analysis also revealed a significant relationship between emotional labour and emotional satisfaction as our “p-value” for both cases of Surface Acting and Deep Acting against Emotional Satisfaction showed a lesser value, p-value = 0.000 for surface acting against emotional satisfaction, while for the case of deep acting against emotional satisfaction, p-value was 0.034. The decision rule states that if $p\text{-value} \leq 0.05$; reject H_0 and accept the alternative (H_1). In this case, we are rejecting H_0 and concluding that there is a significant relationship.

The result also showed that surface acting does have a negative, and weak influence on emotional satisfaction (Pearson correlation (r) = -0.387. Coefficient of determination (r^2) multiplied by 100 gives 15%. While deep acting does have a positive and weak influence on emotional satisfaction as our Pearson correlation (r) was 0.165. Coefficient of determination (r^2) multiplied by 100 gives 2.7%.

Hypothesis3

Hypothesis 3 stated thus: There are no significant differences between one class of hotel and another with regards to the following variables: (I) Emotional labour (SA, DA), (ii) Managements recognition of importance of emotional labour (v) Customer contact employees” recognition of importance of emotional labour (vi) Customers” emotional satisfaction

This hypothesis was tested in two parts. In the first part, analysis of variance (ANOVA) was conducted to determine if there are differences between one hotel class and another. The ANOVA results revealed that there are significant differences between one hotel class and another. Further analysis was conducted to identify the specific variables (listed in Table 4.3) where the differences occurred. The summary of the results presented in Figures 4.3 to 4.6.

Differences occurred between 1-star and 2, 3, 4 and 5-star hotels in 33%, 84.6%, 85.7%, and 93.33% of the tested variables respectively. Differences occurred between 2-star and 3, 4, and 5-star hotels in 46.67%, 66.67%, and 73.33% of the tested variables respectively. Also differences occurred between 3-star and 4, and 5star hotels in 33.33% and 33.33% of the tested variables respectively. Differences occurred between 4-star and 5-star hotels in 33.33% of the tested variable

The mean scores for the managers” responses for each class of hotel was not significantly different (or lower) than 2.5, the expected mean. Test of significance was conducted using t-statistic at $p = 0.05$.

. Result of the test of significance revealed that mean scores of 1.67 and 2.0 for 1 and 2-star classes respectively were significantly lower than 2.5. Hence, we conclude that with respect to 1 and 2-star hotels, the managers have not recognized emotional labour as a critical factor in quality service delivery. For 3, 4 and 5-star hotel classes, their mean scores 2.32, 2.52 and 2.57 respectively were not significantly different from 2.5. Hence, we conclude that managers of 3, 4, and 5-star hotels have recognized emotional labour as a critical factor in quality service delivery.

V. DISCUSSION OF RESEARCH FINDINGS

The main purpose of this study was to investigate the relationship between emotional labour (independent variable) as performed by customer service employees, and service quality, and customers' emotional satisfaction (dependent variables). The two dimensions of emotional labour (surface acting and deep acting) were investigated in this study. Each of these dimensions has consequences on employee's job outcomes. The following sections present discussion on the outcomes of these two dimensions of emotional labour.

Work outcomes of Surface Acting

Surface acting is used by service employee to hide negative emotions or fake felt emotions, emotions that one does not feel (Keilly, 2008; Brotheridge and Grandey, 2002; Hochschild, 1983). A long term use of surface acting leads to emotional dissonance. In this study, it was found out that service employees of 1, 2 and 3-star hotels always use surface acting (means 3.45, 3.29, 2.90 respectively) while 4 and 5-star employees use surface acting often times. The general picture is that service workers at all levels use surface acting during service interaction with customers. In this study it was found that surface acting has negative relationship with employees' attitude to service work.

During one of the interview sessions, a restaurant waitress said thus: "sometimes it is impossible to force out smile from me because of the way the customers treat us; treating us like their house girls....." In another interview session a bar waiter said thus; ".....an old man like me, do you expect me to laugh when small boys come here and use derogatory words on me, I don't laugh when such happens....."

Such scenario as observed from the field work, a situation where service employees find it difficult to smile can lead to deterioration of service quality. Emotional contagion theory confirms that if a service provider serves with smile, the customer will equally smile, while on the other hand if the service provider is grumpy and heavy handed, the customer will be unhappy. Emotional contagion suggests that exposure to an individual expressing positive or negative emotions can produce a corresponding change in the emotional state of the observer (Pugh, 2001; Chu, 2002).

Performance of emotional labour contributed significantly to the poor quality of service complained about by hotel customers in Nigeria. These findings are of significance to hotel organizations as the use of surface acting leads to emotional exhaustion which can lead to deterioration of service quality because of the amount of effort it takes to maintain a smiling face by service providers while coping with difficult customers who believe that they are always right, and take the place of a second boss to the service provider.

Work Outcomes of Deep Acting

In terms of deep acting which is associated with emotive effort, the present study observed that it has positive relationship with service quality ($\rho=.173$), and customer satisfaction. Deep acting (or emotive effort) involves modifying the inner feelings, acts as buffers to negative effects of emotional dissonance (Yalcin, 2010; Rafaeli & Sutton, 1987). Hence, it creates feelings of job satisfaction, in other words, deep acting leads to positive job outcomes and low emotional exhaustion. Also, in the present study, it was found that service employees of the 4 and 5-star hotels use deep acting most of the times (58%), while 1 to 3-star service employees rarely use deep acting during service encounters. The positive job outcomes of deep acting (Hochschild, 1983) can only benefit those who use it often times and not those who rarely use it. Given the findings in this study, service employees of 1-3 star hotels and the organizations are likely not to benefit from the positive effects of deep acting.

Service Quality and Customers' Emotional Satisfaction

Emotional labour is at the heart of service which is the key area for competitive differentiation. level of quality service is the key factor in determining customer emotional satisfaction (Enz and Siguar, 2000; Johnson and Woods 2008; Wharton, 2009; Murrman, 2004). Researchers have found that there is positive relationship between emotional labour and customer service, customer emotional satisfaction, and customer loyalty (Groth et al, 2009; Anderson et al, 2003; Almossawi, 2008; Hochschild, 1983). Findings from the current study are consistent with previous studies. Surface acting has negative relationship with emotional satisfaction and service quality (Spearman's $\rho = -.380$ and $-.388$ respectively); while deep acting has positive relationship with emotional satisfaction and service quality ($\rho= -.173$). These findings suggest that any hospitality/hotel organization that fails to address customer-contact employees' emotion is likely to provide poor quality service to its customers.

Statistical analysis in the current study revealed that customers to 1 to 3-star hotels indicated that they rarely derive emotional satisfaction, while customers to 5-star hotels often times derive emotional satisfaction. These findings suggest that managers in the 1 to 3-star hotels have not recognized emotional labour as a critical factor in quality service delivery; hence, they have not seriously addressed emotions of their customer-contact employees.

VI. CONCLUSION

One remarkable conclusion that can be drawn in this study is that emotional labour has significant impact on employee's job outcomes, particularly on service quality and customers' emotional satisfaction. If emotional labour is managed properly, superior quality of service would be delivered. What was observed in this study was that it was not properly managed. Not only that emotional labour as a construct is unfamiliar to hotel practitioners (managers and customer-contact employees), they are yet to come to terms with the realities of emotional labour, hence, they have not set emotional labour management as corporate priority. The practitioners are not yet cognizant of the changing concept of service from technical delivery (product view) towards focusing on how it is delivered (process view) and the competitive environment of the hotel industry.

Implications of the Study

Understanding emotional labour will place operators of hotel organizations in a better position and enable them formulate policies that will help their organizations compete effectively in a dynamic business environment. Unfortunately, majority of the managers have not come to terms with the realities of emotional labour, hence, the emotional demands on front-line employees towards sustainability and economic success are not appreciated. This is a human resource problem that deserves serious attention within the context of Nigeria's hospitality industry.

Contributions of the Study

This study provides valuable contribution to the literature on emotional labour in the industry, and in particular it serves to create awareness and understanding as to how emotional labour (surface acting, deep acting) affect the service employees and their job outcomes, and emotional contribution. The study has exposed the realities of emotional labour to management of hotel organizations. Understanding proclivities of emotional labour will help organizations to develop procedures and policies that will help them achieve improved service quality, customer satisfaction and customer loyalty.

To the academics and researchers, the study provides them with a framework (model) to understand the role of emotions in the service contexts. Researches regarding emotional labour have been conducted in some industries in Nigeria but not specifically in the hotel industry. The developed framework can serve as a guide and pedestal to other researchers. Having analysed the data according to grades of hotels, operators in each class would come to terms with how emotional labour is performed by their service employees, and managed by the managers.

Recommendations

Within the context of the Nigeria's hotel industry, this study investigated the concept and consequences of emotional labour. Based on the objectives and findings in this study we therefore, recommend that hotel organizations should plan the emotional content and context of their operations in recognition of the emotional demands faced by service employees. Also organizations should review their job descriptions, selection criteria and contents of training programmes for service workers and adopt selection mechanism that aims at achieving the best person-job-fit.

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APPENDIX A

Key Questions for Service Workers

I. Surface Acting (SA). $\alpha = .90$

1. I hide my feelings so as to appear cheerful and pleasant at work.
2. Even when I am angry at work I pretend to be happy.
3. Most times I show feelings that are different from how I feel inside me.
4. I spend most of my work day hiding my true feelings/emotions about situations at work

II. Deep Acting (DA). $\alpha = .92$

1. Make effort to make my inner feelings match my facial expressions even under tension.
2. I try to experience the emotions that I most show.
3. I treat customer's "awkward behaviour" as normal behaviour

III. Emotional Labour Job Perception/Recognition By Service Workers $\alpha = .87$

1. My job requires me to be nice to customers no matter how they treat me.
2. My job requires that I manage customers' feelings/emotions.
3. I don't smile at customers when they annoy me.
4. My job requires me to remain calm and cheerful to customers no matter my situation.
5. I don't hide negative feelings when a customer annoys me.
6. My work requires that I provide comfort to people/customer who are in crises.
7. My job involves managing feelings/emotions as critical aspect of my job.

Key questions for managers

I. Recognition of Importance of Emotional Labour by Managers– scale $\alpha = .86$ Customer-service employee's job requires him/her to:

1. Display natural/genuine emotions during service interactions all the time.
2. Display emotions he does not feel
3. Hide inappropriate emotions during service encounter.
4. Feel emotion he must display during service transaction.
5. Remain calm and nice no matter how the customer treats him.
6. control/manage emotions of customers
7. Display variety of emotions
8. Avoid dealing with difficult people on daily basis.
9. The work of customer service worker is stressful
10. The work of a customer-service worker can have negative effect on his well being.
11. The work of a customer-service worker can get him emotionally exhausted
12. For customer service employee, emotional display is not as important as technical skill in delivering superior service qualities.

13. Difficulties encountered by customer-service employees are part of their job role and does not require special reward/commendation.

II. Management Perception of E.L. Performance by Service Staff $\alpha = .77$ Experience in this company shows that:

1. Most customer- service employees remain calm and cheerful when dealing with difficult customers during service encounter.
2. Most customer-service employees are emotionally stable
3. Most customer-service employees are nice to customers no matter how they are treated.
4. Most customer-service employees easily get upset with angry customers.

Key Questions for Customer

I. Overall service quality. $\alpha = .94$

1. This company offers excellent overall service quality
2. The quality of interaction is poor.
3. This company delivers superior service in every way.
4. I am not satisfied with their services.

II. Emotional Satisfaction Sub-scale. $\alpha = .86$

1. I am happy with their service
2. I am disgusted with their service
3. I am not pleased with their service
4. I enjoyed the interaction

APPENDIX B: DESCRIPTIVE STATISTICS

Table 4.1 Descriptive statistics for Surface Acting & Deep Acting

| | Sample | Surface Acting | | Deep Acting | | | |
|---------|--------|----------------|-----|-------------|------|-----|------|
| | | Mean | SD | Mode | Mean | SD | Mode |
| Overall | 219 | 2.82 | .70 | 3 | 2.14 | .60 | 2 |
| STAR 1 | 38 | 3.45 | .52 | 3 | 1.68 | .50 | 2 |
| STAR 2 | 42 | 3.29 | .50 | 3 | 1.87 | .50 | 2 |
| STAR 3 | 46 | 2.90 | .57 | 3 | 2.09 | .56 | 2 |
| STAR 4 | 48 | 2.5 | .50 | 3 | 2.44 | .54 | 2 |
| STAR 5 | 45 | 2.11 | .53 | 2 | 2.53 | .47 | 3 |

Table 4.2 Descriptive statistics for recognition of importance of emotional labour.

Managers

Service Workers

| Hotel | Sample | Mean | Std. Dev. | Mode | Sample | Mean | Std Dev. | Mode |
|---------|--------|---------------|-----------|------|--------|------|----------|------|
| Star | (n) | (\bar{X}) | (SD) | (M) | (n) | (SD) | | |
| 1 | 20 | 1.67 | .82 | 2 | 38 | 1.24 | .72 | 1 |
| 2 | 20 | 2.0 | .76 | 2 | 42 | 1.65 | .70 | 2 |
| 3 | 24 | 2.32 | .67 | 2 | 46 | 2.00 | .73 | 2 |
| 4 | 24 | 2.52 | .70 | 2 | 48 | 2.05 | .70 | 2 |
| 5 | 22 | 2.57 | .65 | 3 | 45 | 2.33 | .70 | 2 |
| Overall | 110 | 2.26 | .80 | 2 | 219 | 1.87 | .80 | 1 |

Source: Survey data 2014

Table 4.3 Descriptive Statistics for Overall Service Quality and Emotional Satisfaction

| HOTEL | Sample size | Service Quality | | | Emotional Satisfaction | | |
|---------|-------------|-----------------|-----------|------|------------------------|----------|------|
| Star | (n) | Mean | Std. Dev. | Mode | Mean | Std. Dev | Mode |
| | | — | | | | | |
| 1 | 24 | 1.63 | .55 | 2 | 1.60 | .73 | 2 |
| 2 | 28 | 2.0 | .53 | 2 | 2.20 | .50 | 2 |
| 3 | 26 | 2.31 | .62 | 2 | 2.40 | .60 | 2 |
| 4 | 24 | 2.61 | .62 | 3 | 2.50 | .62 | 2 |
| 5 | 22 | 2.60 | .61 | 3 | 2.57 | .65 | 3 |
| Overall | 124 | 2.23 | .69 | 2 | 2.23 | .70 | 2 |

Growth Drivers and Recent Trends in Indian Life Insurance Sector

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ABSTRACT

Indian Life insurance sector is progressing at a very faster rate. This fast growing industry has given a platform for economic growth, infrastructural development and employment. Its importance was realized after it has opened the gate to the private players in the post liberalization period. Customer preference, stiff competition and new regulatory guidelines are acting as catalyst for innovative products and services. Internet and online policy purchase are some new trends that have inspired the players to be more focused in their business. High in volume and low in margin are going to be the ways towards policy procuring. Rural, social and Micro insurance is a new avenue in life insurance sector.

This paper discusses various growth drivers and the recent insurance scenario that the present life insurance industry is facing. . The sample for this study includes private life insurers and it analysis the data of 6 years from 2008 to 2014. The suggestion and recommendation will help both academicians and industry personnel to re-engineer their thought in insurance sector.

Keywords: Life Insurance; Regulator; Plan; Insurance Industry; IRDA

I. INTRODUCTION

Insurance is the equitable transfer of the risk of a loss, from one entity to another, in exchange for a premium and can be thought of as a guaranteed and known small loss to prevent a large, possibly devastating loss. Life insurance is defined as a contract between the policy owner and the insurer, where the insurer agrees to pay a sum of money upon the occurrence of the insured individual's or individuals' death or some other event, such as terminal illness or critical illness.

Nearly 80 per cent of Indian population is without life insurance cover and is also subject to weak social security and pension systems. This itself is an indicator that growth potential for the insurance sector is immense

Statement of the problem

The study is indicated briefly to analyze the recent trends of the life insurance and its impact to the entire insurance Industry

II. REVIEW OF LITERATURE

Sabera (2007) in his study „Privatization of Insurance Industry in India – The Growth“ reviewed to look at the business strategies of Private Life Insurance Companies & future expectations. The study found that the private insurance players had established their own identities in the Indian market in a short period of time & they had 200 percent growth in the second year of liberalization.

The researcher found that Indian Life Insurance Industry was still underdeveloped one, as 80 per cent of Indian population was still not under insurance cover & majority of LIC's business was procured by their only 20 per cent of ill-trained agency force which highlight that private players need to enter. These private players were mainly concentrating on consumer service. For this purpose they were following variety of strategies & looking for various methods and delivery channels like call centres, internet, telemarketing & direct marketing. The study concluded that with the entry of more private players, the competition was likely to become very high in life insurance segment.

Kannan and Thangavel (2008) in their paper "Overview of Indian Insurance Sector" analysed the market share of Indian Insurance Industry from the year 2001 to 2008. They highlighted that though share of LIC is more still private sector is competing and with its coming, market share of LIC is decreasing as private sector is providing new variety of products according to the choice of the customers.

Suresh (2009) in his study „Recipe for Successful life insurance business“ assessed the importance of distributor playing the role of first level professional in life insurance business. Treating the customer fairly is a new management initiative that looks beyond mere customer satisfaction. He emphasized that insurer should ensure that though customer is fully satisfied with services but if not treated fairly on account of ignorance of what was actually due to him it would demand change in practice.

Udaychandran (2010) in his paper „Need for Variety in Product“ says that there is need for new products particularly long term in nature especially in health insurance sector, health savings account would be a wise proposition and by designing the product that would be outstandingly unique but given that it should be within the constraints of regulatory approval. It also studied the performance of the products that have already been introduced in the market and wherever necessary, appropriate changes must be made, it must be in tune with that of customer demands. For this imaginative combination of riders with base products could lead to better solutions.

Parekh (2011) in his paper „Corporate social responsibility in Insurance“ emphasis to put on improvement of awareness among masses by educating them about preventive healthcare, adoption of general hygiene, arresting the rate of accidents, etc. Though it sound very mundane, there is a need of hour for spreading awareness in these aspects especially in rural and under developed areas. He found that these attempts could lead to better business results for the insurers showing positive results in visible development of the society.

Need of the Study

Since LIC's existence has social significance for the Indian economy & thus lot of work has been done to assume its growth & performance in India.

With the emergence of private companies in Life Insurance Sector the industry has become highly competitive due to its aggressive advertising campaigns, better improved products, awareness of life insurance has increased. But so far no serious attempt has been made to study this impact of these new & growing private players in India. Hence, an attempt is made to study the present scenario prevalent in private life insurance sector

Limitations of the Study

1. The data collected for the study depends on published financial statements of the companies which may incorporate some drawbacks.
2. The horizon of the study merely confined to very less number of variables as the growth drivers for studying recent scenario.

Objective of the study

1. To study the present life insurance scenario and their growth drivers in India
2. To study the recent trends in life insurance sector.

III. RESEARCH METHODOLOGY

Exploratory research methodology is used here to analyze the data. Data was collected from various sources such as books, IRDA journals as well as other journals like Life Insurance Today etc. In this paper, we have referred previous research articles. Apart from this, we have visited different websites and professional magazines. So it is purely based on available secondary data.

Sample Size

The entire private life insurance sector has been taken for the study.

Research Tools

The study uses means, mean difference; standard deviation to measure the mean performance of the variable i.e. micro insurance and students' t-test has been used between two periods chosen i.e. 2008-2010 and 2011-2014.

Growth Drivers of Life Insurance Industry

The growth of Indian life insurance sector is divided into two main periods. First part of the period of study is from 2008 to 2010 and other from 2011 to 2014. The first decade was a period of high growth. Most of the players were in good condition due to the emergence of unit linked insurance plans. From 2010 onwards, that is after the first decade the insurance industry has undergone lot of changes as there was a stiff competition, changed IRDA guidelines with respect to sale of ULIP's and changes in commission structure paid to the agents which were the major reasons for the stagnant growth in this recent scenario in life insurance industry.

The present research paper studies the recent life insurance scenario of the entire private life insurance sector in India in the light of changes mentioned above. For this purpose, various factors affecting micro insurance in Indian life insurance industry have been analyzed with respect to number of micro insurance agents and new business premium collected by them has been analysed.

IV. ANALYSIS AND DISCUSSION**Micro Insurance**

Micro insurance is the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of risk involved (Craig Churchill, 2007). According to International Labour Organization, micro insurance is a mechanism to protect poor people against risk (accident, illness, death in the family, natural disasters, etc.) in exchange for insurance premium payments tailored to their needs, income and level of risk. It is aimed primarily at the developing world's low-income workers, especially those in the informal economy who tend to be

under-reserved by mainstream commercial and social insurance schemes.

In order to facilitate the penetration of micro insurance to the lower income segment in India, the regulator – Insurance Regulatory Development Authority (IRDA), has formulated the Micro Insurance Regulations 2005. The regulation provides a platform to distribute insurance products which are affordable to the rural and urban poor and to enable micro-insurance to be an integral part of the country's wider insurance system. The main thrust of micro insurance regulation is the protection of low income with affordable insurance products to help cope with and recover from common risks. These regulations have allowed Non Government Organization (NGOs) and Self Help Groups (SHGs) to act as agents to insurance companies in marketing the micro insurance product and have also allowed both life and non-life insurers to promote composite microinsurance products. The annual reports of IRDA mention the business under micro insurance in its annual report from the financial year 2007-08 onwards. Although micro insurance started off as a minuscule portfolio but has been able to demonstrate growth in the last few years.

The following table shows the number of micro insurance agents from the period 2008 to 2014.

Company Wise Number of Micro Insurance Agents (As on 31st March)

| INSURER | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------|------|------|------|------|------|------|------|
| AEGON | 0 | 0 | 0 | 0 | 0 | - | - |
| AVIVA | 0 | 1 | 1 | 1 | 2 | 659 | 667 |
| BAJAJ | 168 | 193 | 210 | 210 | 210 | - | - |
| BHARTI | 0 | 0 | 0 | 0 | 0 | - | - |
| BIRLA SUNLIFE | 77 | 104 | 129 | 33 | 90 | 97 | 97 |
| CANARA HSBC | 0 | 0 | 0 | 0 | 0 | - | - |
| DLF PREMIUM | 0 | 0 | 0 | 0 | 0 | - | - |
| EDELWEISS TOKIO | 0 | 0 | 0 | 0 | 0 | - | 1 |
| EXIDE LIFE | 0 | 0 | 0 | 0 | 0 | - | - |
| FUTURE GENERALI | 0 | 0 | 0 | 0 | 0 | - | - |
| HDFC STANDARD | 0 | 0 | 0 | 0 | 58 | - | - |
| ICICI PRUDENTIAL | 0 | 14 | 14 | 47 | 0 | 74 | 78 |
| IDBI FEDERAL | 0 | 0 | 0 | 0 | 0 | - | - |
| INDIA FIRST | 0 | 0 | 0 | 0 | 0 | - | - |
| KOTAK MAHINDRA | 0 | 0 | 0 | 0 | 0 | - | - |
| MAX LIFE | 0 | 0 | 0 | 0 | 0 | - | - |
| PNB METLIFE | 0 | 0 | 0 | 9 | 12 | 14 | 14 |
| RELIANCE | 0 | 0 | 0 | 0 | 0 | - | - |
| SAHARA | 8 | 13 | 15 | 15 | 15 | 5 | - |
| SBI LIFE | 0 | 0 | 0 | 0 | 0 | - | - |

| | | | | | | | |
|----------------|------|------|------|-------|-------|-------|-------|
| SHRIRAM | 1 | 1 | 1 | 0 | 421 | 523 | 523 |
| STAR UNION | 0 | 0 | 0 | 0 | 0 | - | - |
| TATA AIA | 164 | 277 | 400 | 443 | 443 | 452 | 276 |
| PRIVATE TOTAL | 418 | 603 | 770 | 758 | 1251 | 1824 | 1656 |
| LIC | 4166 | 6647 | 7905 | 9724 | 11546 | 15228 | 18401 |
| INDUSTRY TOTAL | 4584 | 7250 | 8676 | 10482 | 12797 | 17052 | 20057 |

In order to compare the mean performance between two periods namely the year 2008-10 & the year 2011-14, of the private insurer, Student's, t'-test for two independent samples is performed and the result is furnished below:

Micro insurance agents

| | Mean | | Mean difference | Std. Error | 't' value (df: 4) | Sig |
|----------------|----------------|---------------|-----------------|------------|-------------------|-----|
| | Before 2008-10 | After 2011-14 | | | | |
| Private sector | 7748 | 16635.33 | -8887.33 | 2296.6 | -3.86978 | Sig |

Significant at 5 % level

It is seen from the above table the means, mean difference, the standard error of the mean difference between the year 2008-10 and the year 2011-14 of the Private life insurers the mean micro agents. Since the calculated, 't' is significant at 5 per cent level it is concluded that the mean micro agents is higher during the time period 2011-14 than 2008-10 periods.

Individual New Business Premium under Micro Insurance Portfolio

While the individual new business premium for private life insurance sector under the micro-insurance segment in 2012-13 stood at Rs.1018.54 lakhs for 695904 new policies whereas it dropped to 929.29 lakhs for 561339 new policies only for the year 2013-2014 & LIC contributed a significant component of the business procured in this portfolio by garnering Rs. 8635.77 lakhs of individual new business premium under 2205820 policies in 2013-2014. Also, the Authority had issued a circular on 3rd April, 2013 permitting several more entities like District Co-operative Banks, Regional Rural Banks, Individual owners of Kirana shops, etc. who are Banking Correspondents to be appointed as Micro-insurance agents with a view to facilitating better penetration of Micro-insurance business.

To remove various impediments to financial inclusion, insurance companies have been permitted to accept as Proof of Identity (PoI) and Proof of Address (PoA) (i) Current Passbook (updated up to the previous month) and (ii) Current statement of accounts. Simultaneously, the Authority has directed discontinuance of the need for confirmation or authentication by the Bank for these documents in case of micro-insurance products. The decision was aimed at facilitating reduction of the on boarding costs in the Financial Inclusion drive proposed by the Government of India.

The following table shows the individual new business in terms of number of policies and premium under micro insurance portfolio from the period 2009 to 2014.

Individual New Business under Micro-Insurance Portfolio (PREMIUM Rs. in Lakhs)

| Insurer | 2008-09 | | 2009-10 | | 2010-11 | | 2011-12 | | 2012-13 | | 2013-14 | |
|------------------|---------|---------|---------|----------|---------|----------|---------|----------|---------|---------|---------|---------|
| | NOP's | Premium | NOP's | Premium | NOP's | Premium | NOP's | Premium | NOP's | Premium | NOP's | Premium |
| Aegon Religare | | | | | | | | | | | | |
| Aviva | 310 | 1.52 | 3757 | 18.17 | 11222 | 58.87 | 6322 | 36.4 | 9789 | 58.52 | 17328 | 51.39 |
| Bajaj Allianz | 10226 | 85.47 | 127 | 2.42 | | | | | | | | |
| Bharti Axa | | | | | | | | | | | | |
| Birla Sunlife | 280659 | 147.69 | 568647 | 263.72 | 290395 | 186 | 256226 | 168.14 | 123147 | 53.88 | 91760 | 47.95 |
| Canara HSBC | | | | | | | | | | | | |
| DLF Premica | | | | | | | | | | | | |
| Edelviss Tokyo | | | | | | | | | | | | |
| Future Generali | | | | | | | | | | | | |
| HDFC Std. | | | | | | | 176464 | 352.93 | 221276 | 442.55 | 199774 | 399.54 |
| ICICI Prudential | 234299 | 122.05 | 344926 | 288.18 | 324889 | 256.08 | 321009 | 281.44 | 296323 | 306.12 | 212650 | 338.22 |
| IDBI Federal | | | | | | | | | | | | |
| India First | | | | | | | | | | | | |
| Kotak Mahindra | | | | | | | | | | | | |
| Max New York | | | | | | | | | | | | |
| PNB MetLife | 734 | 18.69 | 125 | 7.19 | 3501 | 4.21 | 9243 | 10.63 | 5886 | 23.45 | 489 | 0.32 |
| Reliance Life | | | | | | | | | | | | |
| Sahara | 604 | 8.21 | 324 | 4.9 | 1483 | 12.24 | 6282 | 39.43 | 10940 | 72.89 | 2205 | 16.77 |
| SBI Life | | | | | | | | | 695 | 2.28 | 8071 | 30.89 |
| Shairam | | | | | | | | | | | | |
| Star Union | | | | | | | | | | | | |
| Total AIG | 84019 | 154.17 | 80903 | 255.2 | 68243 | 217.69 | 18114 | 75.25 | 27848 | 59 | 28832 | 43.99 |
| Private total | 610851 | 537.81 | 998809 | 839.78 | 699733 | 735.09 | 793660 | 964.22 | 695904 | 1018.54 | 561339 | 929.29 |
| LIC | 1541218 | 3118.74 | 1985145 | 14982.51 | 2951235 | 12305.76 | 3826783 | 10603.49 | 4340235 | 9949.05 | 2205820 | 8635.77 |

In order to compare the mean performance between two periods namely the year 2008-10 & the year 2011-14, of the private insurer, Student's „t“-test for two independent samples is performed and the result is furnished below:

New Business under Micro-Insurance Portfolio**NOP**

| | Mean | | Mean difference | Std. Error | ‘t’ value (df: 4) | Sig |
|-----------------|----------------|---------------|-----------------|------------|-------------------|-----|
| | Before 2008-10 | After 2011-14 | | | | |
| Private Insurer | 2159199 | 3457613 | -1298413 | 766138.6 | -1.69475 | ns |

ns- Non Significant at 5 % level

It is seen from the above table the means, mean difference, the standard error of the mean between the year 2008-10 and the year 2011-14 of the private insurer the mean NOP. Since the calculated „t“ is no significant it is concluded that the mean performance is on par during the time period 2008-10 and 2011-14 period.

New Business under Micro-Insurance Portfolio PREMIUM

| | Mean | | Mean difference | Std. Error | ‘t’ value (df: 4) | Sig |
|----------------|----------------|---------------|-----------------|------------|-------------------|-----|
| | Before 2008-10 | After 2011-14 | | | | |
| Private sector | 704.2267 | 970.6833 | -266.457 | 92.26 | -2.88811 | Sig |

Significant at 5 % level

It is seen from the above table the means, mean difference, the standard error of the mean difference between the year 2008-10 and the year 2011-14 of the Private insurer the mean premium earned. Since the calculated „t“ is significant at 5 per cent level it is concluded that the mean performance is higher during the recent time periods 2011-14 than 2008-10 periods.

V. RECENT TRENDS IN LIFE INSURANCE INDUSTRY Good Servicing Standards

Servicing in life insurance assumes greater role and acquires strategic importance not only as a tool for customer retention but also for customer acquisition. We have analysed servicing from the perspective of customer and the market. In life insurance, products are more or less similar across insurer and even the investment patterns and market are defined. In the long run the expected returns of a life insurance product do not vary much except where there are huge differences in costs.. Customer dissatisfaction can get revealed through customer’s complaint. The system of recording, redressing and reporting grievances has always been there in the industry. Further IRDA, introduced a new system from 1st April 2011 known as Integrated Grievance Management System (IGMS).

IGMS

IRDA has launched the Integrated Grievance Management System (IGMS). Apart from creating a central repository of industry-wide insurance grievance data, IGMS is a grievance redress monitoring tool for IRDA. Policyholders who have grievances should register their complaints with the Grievance Redress Channel of the Insurance Company first. If policy holders are not able to access the insurance company directly for any reason, IGMS provides a gateway to register complaints with insurance companies.

In the study of complaints we face one problem which needs to be addressed. We have the absolute number of complaints against a life insurer. The number of complaints for an insurer like LIC which has the highest number of in-force policies will always be large and it would be unfair to compare across all insurers the data of absolute number of complaints. To overcome this we need to normalize the data to arrive at a more comparable measurement of the level of dissatisfaction against an insurer. For this, we will make use of a concept known as “Complaints per Thousand In-force Policies (CpTIP)”. This is a ratio of the number of complaints received by an insurer during a financial year to the total number of in-

in-force policies serviced by the insurer at the end of the financial year. The use of this ratio eliminates bias against any insurer and hence we can use data of all the twenty four life insurance company irrespective of the number of policy serviced by them CpTIP is expressed as number of complaints per thousand in-force policies.

$$C_p \text{ TIP} = \frac{\text{(No. of Complaints received in a Financial Year)}}{\text{(No. of Inforce Policies at the end of the Financial Year)}} \times 1000$$

A lower CpTIP score indicates lesser number of complaints per thousand policies serviced by the insurer and thus indicates lesser number of dissatisfied customers and indirectly it indicates better servicing standard..

Role of social media

Social media, the new milestone helped in bringing millions of people to its platform in a very short time irrespective of their status. Facebook in terms of users can be compared to a country only next to China and India. It currently has 1 billion active users i.e. 1 in every 8 persons of the world uses it. Similarly 600 tweets are exchanged every second. The digital distribution scenario is making strategic advances in the face of the challenges posed by the disruptive nature of technology. For the players in life insurance this could help them to leave digital footprint that can boost their proposition into a brand that is aided with the enablers as differentiating aspects.

The introduction of 4G / 3G Services at relatively cheaper rates will definitely increase the reach mobile phones and net connectivity, which in turn will increase the possibility of connecting with the insured more conveniently. Projects like Google's Project Loon and Facebook's internet.org will ensure more and more people getting connected in this network. Companies have been engaging their clients in various ways via. Games, discounts on purchase through mobile app, Facebook communities, twitter followers, blogs and many more. Thus social media has been beneficial in activities like connecting with the insured, engaging them, communicating with them, getting feedback, sales point i.e. enhancing the sale of policies online would be a major source of business in the near future.

Such innovations will not only help generate new business but will also eradicate the moral hazards by the insured along with increase in transparency. The banking sector has already taken a leap into technology and has utilized it for better prospecting. The insurance companies are also utilizing the social media but it needs to be strategized in a better manner so that the huge opinion warehouse can start communicating the hidden trends and feedback it deciphers right now along with working as a string brand development tool.

Frugal Innovation

It has become imperative for every business to strive to innovate to deliver greater value to the customer. Innovation is no longer the domain of manufacturing and in the last few years, service innovations have been in the news. Earlier, supply chain management was considered to be the domain of manufacturing but now service supply chains is being talked about and service sectors like banking, insurance, health care, hospitality, education, retail are using technology to provide better service to customers.

Every business must innovate to grow. Innovation is an important part of strategic management. After the economic crisis in recent times, the western-centric innovation model has been put to question. Companies often get into the standardization mode and seldom are questions raised about spending huge amounts of money on R&D without knowing about the returns from the investment. In the era of globalization, companies would do well to revamp their strategy to leverage global ideas, talent and markets. Companies can create special innovation groups to motivate engineering and product teams to come up with out-of-box ideas.

But the Indian insurance market is complex because of regional disparities. Underwriters and claim processors need to keep their ears on the ground to look at such innovations and how it can affect the insurance business. Jugaad is a Hindi word that means doing more with less. Jugaad innovations can bring about dramatic results in cost efficiencies and productivity enhancements for business. Jugaad innovations can have both positive and negative implications for insurance. Jugaad innovation needs collective thinking and so it is best for insurance industry to come together to discuss ways of providing solutions to grow business and reduce risks.

VI. TECHNOLOGY TRENDS AND DIGITAL DISTRIBUTION STRATEGIES IN INSURANCE

The digital distribution phenomenon has evaporated the physical boundaries and geographical barriers and has made goods and services available at a click. The digital distribution scenario is making strategic advances in the face of the challenges posed by the disruptive nature of technology. For the players in life insurance this could help them to leave digital footprint that can boost their proposition into a brand that is aided with the enablers as differentiating aspects. While doing so, insurers can use the powerful social medium to engage its public. Digital also allows insurers to relook at the new market segments and strategize to exploit the same need is felt to have a culture of innovation and learning. Similarly products that could be sold and serviced through digital would resonate with the digital citizens and create a long term value for all.

There are compelling reasons to move to a full fledged digital distribution channel. Apart from the cost efficiencies of the channel there are certain positive gains such as the integrative approach, timeefficiency, quality management and facilitation.

These aspects give digital its cutting edge over traditional channels. The soul of digital distributions is empowerment to customers. Reaching out to them directly through the digital medium would see reduction in time to market and generate leads, on the other hand the customers taking charge would make them self reliant and shun away from the traditional desks. With the number of transactions growing through the online such as premium payment, obtaining the status of policy, revival quotes, loan quotes, assignment and nominations etc. with the pace of this growth and by widening service offerings through the internet could really close the gap for customers and prospects. Providing the self driven menu for servicing would help the right customer getting served at the right time with the right offering. The marginal costs of reproducing information through social channels are almost negligible and could be put to great use by communicating the organizations new initiatives through the preferred channel of communication by way of technical manuals, visuals and videos.

VII. CONCLUSION

Insurance sector plays an important role in the economic development of a country. The technology should be laid out in such a manner that it includes the requirement from the launching policy till the final stage when it reaches in the hand of customer, means the service provided to the policy holders or the end users. Digital system should allow insurers to relook at the new market segments and strategize accordingly to have a culture of innovation and learning. Similarly products that could be sold and serviced through digital would resonate with the digital citizens and create a long term value for all. The new entrants in the insurance business sector should take pains and understand peoples demand and needs and transform their policies as per their choices. They should be designed to provide the facilities to customers as to give the customers full reliance and satisfaction. In meeting the challenges and making the best of the opportunities lies the future of the Indian insurance companies.

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Training on the Use of Information and Communication Technologies: A Field Study on the Attitudes of Administrative Leaders in the Government Agencies in the Kingdom of Saudi Arabia

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ABSTRACT

This study aimed to know the attitudes of the administrative leaders in the government agencies in the kingdom of Saudi Arabia towards their training on the use of information and communication technologies, to know the extent to which some of the characteristics of these leaders influence their attitudes, and to identify the main obstacles that limit on the use of ICTs. A random sample of (168) of leaders were surveyed through a questionnaire. The results showed that there are positive attitudes towards the use of ICTs, and that no demographic characteristics affect that attitude. The study showed that the most important constraints that limit their training are limited time available, the desire of to be involved in training, and weakness of the training infrastructure. The study suggested several recommendations, such the preparation of appropriate training programs for training administrative leaders, providing appropriate incentives, and allocating an a sufficient budget to achieve the training objectives.

Keywords: Administrative leaders, Training, Information and Communication Technologies, Government Agencies

INTRODUCTION

Administrative leaders are central to human resources as their activities and tasks are considered crucial in managing and supervising organization. Despite the importance they have, it seems they come from nowhere (Eagly 2018). Their tasks and activities require them to possess several skills and technical capabilities that may assist them in the course of performing their various tasks. The government agencies strive to develop leaders in all fields especially in the field of information and communication technologies, and the administrative leaders themselves seek to develop themselves through training, practicing and learning (Hasanien, 2017: 61). The government agencies are in a dire need, now more than ever, to keep pace with all technological development through training the leaders on the use of such technologies for achieving the goals of the governmental institutions and performing administrative activities effectively (Malkawi, 2017. This cannot be achieved unless the leaders themselves are very keen to be trained on the use of these technologies as well as their conviction of the importance of continuous development). Many agencies attend to training being a tool to raise the level of performance, increase productivity and efficiency; and prepare the employees to perform tasks entrusted to them and shoulder more responsibilities (Al-Nowyajem, 2005).

The administrative leaders are one of the most important factors in building and managing organizations; something which require the existence of leaders with competitive advantages in these organizations who are capable of running them effectively in order to achieve the objectives of these organizations (Mansour, 2008, Al-Otaiby, 2014, Al-Qahtani, 2014). It is also very important for those leaders to possess characteristics and skills; the most important of which are the technical skills, through which they can perfect and excel in performing work (Al-Allaq, 2016: 5). This requires being familiar with the attitudes of administrative leaders towards their training on the use of ICTs in the government agencies. Thus, this study aims to recognize the attitudes of administrative leaders in the government agencies in the Kingdom of Saudi Arabia regarding their training on the use of ICTs, and to be familiar with the most important obstacles that limit their training. This, in turn, will help the government agencies to develop their skills and thus make sure they perform the tasks entrusted to them in an effective way. Consequently, this study was organized in an introduction and four main sections.

SECTION I: THE GENERAL FRAMEWORK OF THE STUDY

Problem Statement

ICT's are considered one of the main drivers for achieving administrative work with the various systems and applications they include. As it is very crucial for administrative leaders all over the organization to do their job and perform their tasks in a very effective way, the use of ICT's, in this case, is very important in achieving this role. Hence, training administrative leaders on the use of ICT's is vital, as training is one of the most important elements of development. There is a lack in the studies concerned with recognizing the attitudes of the administrative leaders with regard to their training on the use of ICTs especially in the Kingdom of Saudi Arabia. Thus, the study problem is represented in knowing the attitudes of administrative leaders regarding their training on the use of ICT's in their agencies, as well as recognizing the main obstacles that limit their training.

Significance of the Study

The importance of this study is based on two main dimensions; the first is that it is directed to an important group of workers in the government agencies, the administrative leaders. The second dimension is that it focuses on the attitudes of the administrative leaders regarding their training on the use of ICTs. There is also another scientific dimension which is represented in highlighting the attitudes of administrative leaders concerning their training on the use of ICT's, which will attract the attention of researchers and practitioners who seek to know the attitudes of the administrative leaders regarding these technologies and the training on how to use them. The study also raise the attention on the level of government agencies and administrative leaders with regard to the importance of the attitudes of administrative leaders and eliminating obstacles that limit training on the use of ICTs. This, consequently, will help them develop their knowledge, skills and capabilities in order to help them to perform their roles effectively and thus achieving the objectives of the organization.

Study Objectives

The study aims to achieve the following:

1. 1-Recognizing the characteristics of administrative leaders in government agencies.
2. 2-Identifying the attitudes of administrative leaders regarding their training on the use of ICTs in government agencies.
3. 3-Knowing the nature of the relation between personal and organizational traits of administrative leaders, as well as their attitudes words training on the use of ICTs.

4. 4-Being familiar with the main obstacles that hinder the training of administrative leaders on the use of ICTs.
5. 5-Presenting suggestions and recommendations that aim to raise the awareness of the administrative leaders regarding their training of the use of ICTs in government agencies.

Questions and Hypotheses

The study poses the following questions:

1. What are the personal and organizational characteristics of administrative leaders in the study sample of government agencies?
2. What are the attitudes of the administrative leaders regarding their training of the use of ICTs in government agencies? This question leads to the following hypothesis "The average of the attitude of the administrative leaders regarding their training on the use of ICTs is less than the hypothetical average (3)".
3. 3-Is there any impact of personal and organizational characteristics (scientific qualification, age, years of experience, job type) of the administrative leaders on their attitudes towards training on the use of ICTs? This questions leads to the following hypothesis: "There are no statistically significant differences between the attitudes of administrative leaders regarding their training on the use of ICTs and their personal and organizational characteristics (scientific qualification, age, years of experience, job type)
4. What are the main obstacles facing the administrative leaders when trained on the use of ICTs?

Limitations of the Study

The limitations of this study are to recognize the attitudes of administrative leaders towards training on the use of ICTs and the main obstacles limiting the training of such leaders on the light of the available literature related to study theme and resulting opinions of study sample. This study is limited to surveying the opinions of administrative leaders during the fourth quarter of the year 2018.

SECTION II: METHODOLOGY

Methodology

The study applied the descriptive analytical approach which describes, construes and focuses on the phenomenon (Al-Assaf 1995: 189). The study derived its data and information through office survey of the literature and studies on the attitudes of administrative leaders towards training on the use of ICTs, and the field survey of a sample of administrative leaders in government agencies.

Population and Sample

The population of the study are the administrative leaders in the government agencies in the Kingdom of Saudi Arabia. The researcher, because of the vast numbers of those administrative leaders, chose the approach of two-stage sampling; the first stage included the identification of government agencies (the number is 110 agencies represented in ministries, public agencies, apparatus and organizations with the exception of military agencies. The researcher then chose a random sample amounting to (20%) of government agencies reaching (22) agencies. The stage 2 included the identification of (12) questionnaires to each agency, so the distributed questionnaires amount to (264), which were distributed through the departments of public relations and media, planning and development and research. The researcher received (176) questionnaires representing (67%) of all questionnaires. The researcher excluded (8) questionnaires because they were not complete. Consequently, the number of valid questionnaires suitable for research and analysis amount to (168) questionnaires representing (64%) of all the distributed questionnaires.

Data Collection

The researcher applied the survey approach to collect study data by designing a special questionnaire. To verify the face validity to study tool, it was presented to a group of referees in the fields of methodology, statistics and administration; (3) of those referees are from Saudi universities, (4) of them are from the Institute of Public Administration. The stability test was verified through conducting a pilot survey on a random sample of (18) administrative leaders. Depending on the data of pilot sample, Pearson coefficient was obtained and its degrees ranged between (0.48) and (0.73). The internal reliability coefficient was computed by Cronbach Alpha Equation, and it was (0.783).

Data Analysis

The Statistical Program for Social Science (SPSS) version (21.0) was used, and a number of descriptive approached were employed, the one-sample t-test was used to test that the mean average is equal or more than the value of the hypothetical average of the scale (3) according to the applied Likert Five Points Scale at the significance level (0.05%). The one-way ANOVA Test was employed to make sure that the personal and organizational characteristics have no effect on the attitudes of administrative leaders towards their training on the use of ICTs.

SECTION III: THEORETICAL FRAMEWORK AND LITERATURE REVIEW**First: Theoretical Framework****Administrative Leaders**

Many researchers and practitioners devote their interest to administrative leaders being very significant in most organizations specially the government agencies as a main pivot for administrative development. Despite the variety of leadership styles, the administrative leader possess the characteristics of different leadership styles (Mason, 2018). The administrative leader is the main drive, motivator and influencer of employees' behaviors. Administrative leadership is responsible for realizing the objectives, missions, and bringing about the qualitative transformations for any human gathering (Moustafa, 2016: 195). The administrative leadership faced a difference and contradiction in modern administrative thinking regarding its concept, constituents, and elements due to lack of research methodologies and measurement processes. This led to several theories and leadership styles which construed its establishment including the approach to characteristics and attitudes (Abul Fadl, 1996: 15). Due to the diversity of leadership styles, it gained vast interest. Some indicated the importance of the leadership and its role in organizing and managing formal and informal institutions to raise the level of performance. The administrative leadership is associated with the establishment of human society and it developed historically since the establishment and appearance of countries and their institutions. Several administrative theories have been developed in this regard (Abdul Hamid et al, 2011: 171; Aboudy, 2010: 17).

It is crucial to develop the administrative leaders due to the important role they play in directing different operations in the organizations and activating their strategies. The administrative leaders also play a central role in managing crisis. The administrative leaders face several difficult and complicated tasks and situations (Broekema, et al., 2018). The administrative leaders are very important these days and their importance becomes evident through keeping pace with the surrounding variables (Saif, 2017: 12). The modern administrative thought focused on the importance of preparing and developing administrative leaders for the sake of accomplishing organization tasks and achieving their objectives through affecting the others to achieve distinguished performance (Al-Silmy, 2017: 163). Some

indicated the scarcity of administrative leaders who possess necessary skills (Masoud, 2009: 37). The researchers classified the characteristics of the administrative leader into three groups of skills i.e. intellectual, technical and humanitarian (Al-Rabiey, 2012: 301). Others expressed that there are five characteristics of the leader i.e. technical, humanitarian, educational, symbolic and cultural (Coklar, 2012). The administrative leaders are very needed for different agencies. Their importance stems from them being the coupling link between the employees and the accomplishment of organizations' objectives. They are also the catalyst of positive powers responsible for developing and enhancing human resources (Al-Baradie, 2015). Using ICTs is considered one of the most important skills and knowledges that administrative leaders should strive to acquire. The organizations of today go through complications and future changes. There are several skills that should be possessed by future leaders including organization of business networks through the smart use of electronic media and personal communications. The future leader is in dire need for vast business networks and technologies communications to better serve the organization as they provide speed in disseminating and receiving information (Al-Tarawna, 2013).

Training the Administrative Leaders

Training is one of the most important methods to develop human resources especially when it becomes vital to keep pace with the social, economic and technological changes. Al-Humairy (2012) suggests that training leaders is considered a cornerstone in the process of administrative development in general taking into consideration the current circumstances the different organizations are facing and their requirements. That is the reason why the administrative leader should possess the knowledge, skills and capabilities that help him to lead. Consequently, training requires several qualitative programs that enhance such knowledge and behavioral, technical and administrative skills.

As training is considered a tool to develop administrative leaders, McCauley et al (1998) indicated that it increases the ability of the individual to be effective in leadership roles and processes. Brungardt (1996) also suggested that training is a form of growth or development stage in life cycle, which in turn encourages, promotes and helps to broaden knowledge and experience required to improve the potentialities of the leader. Several agencies attend to training and allocate huge budget for it, as well as several qualitative training packages. In this regard, the United States of America spends an amount of (87.6) billion dollars on training industry in general (Training Magazine, 2018: p19).

The Kingdom of Saudi Arabia pays a great attention to education and the training of work force. The appropriations for the public education, higher education and the training of workforce in the year 2019 state budget are (192.82) billion Saudi Riyal. These appropriations included the allocations of the initiatives to achieve the Kingdom Vision 2030 programs (Ministry of Finance, State Balance Sheet for the year 2019, p 63). Administrative training styles and its modern trends vary to include several styles such as e-training, competency-based training (CBT), direct training through the internet, training through multimedia (Ismael, 2014). Training administrative leaders stems from the concepts of technical and administrative training which is based, in concept, on the importance of identifying training needs which in turn is based upon analyzing the organization, the job and the targets of training process.

With regard to training the administrative leaders on ICTs, it is very important, not only on the individual level, but it goes beyond that to influence the work team and the organization itself. In the context, Hanebeck (2000) suggested that there are four main attitudes affecting the society and the way the society deals with these technological means; the most important of which is huge acceleration in technological innovations (p 27). In this context, training on such technological innovations is one of the main factors contributing in broadening the training on ICT's. It started with the invention of these innovations and their development. However, approached them with different directions with regard to duration and reasons of use, and the effect of this on behaviors (Eied, 2003; Al-Khateeb, 2007: 16). With knowledge development, and as many resources include several multimedia, combined with the variety and development of such resources emphasized the importance of training on technology. This development became an effective tool to clarify many types of modern knowledge and coexist with such modern means and technologies in society (Shodaifat and Arshad, 1428 H: 230).

To acquire the skills to deal with different ICTs, all public and private institutions spend huge budgets on training which is determined normally according to the needs of organizations and individuals. Training should also be related to the objectives and priorities the organization wishes to achieve (ASTD, 2005). As training is related to job satisfaction and commitment, there should be proper budgets for such training in different organizations in order to achieve this relation effectively, (Owens, 2006). There is no doubt that there are different factors and variables that influence training including, as Alexander (1991) suggested, cost, lack of available resources, lack of time, and the dire need to materials, devices and other helping aids (p 70). Cerych (1982) summarized several problems facing countries regarding training on technology as follows: comprehensiveness of training to different levels, lack of financial resources, weak training, availability of suitable hardware and software (pp 422 – 423).

With increasing demand on training, individuals and organizations seek to guarantee the highest return on investment (ROI). That's why training should be designed using standards that achieve high quality, should have clear objectives, should have an opportunity to promote what follows the training, and should be assessed properly (Emanuel, 2010: 77). Leaders should be trained on different knowledges and skills using several means such as workshops, focus groups etc. (Bass, 2004).

Information and Communication Technologies

The digital revolution led to a huge growth in data and information that can be exchanged, organized, saved and searched, beside facilitating communications among individuals and organizations alike. Technology has become the one essential element in the production processes and in providing various services all over the world and must be governed and audited (Malkawi et. al., 2010). Many countries strive these days to achieve a proper level of digital transformation and invested millions in ICTs (Malkawi, 2017). In this regard, the Kingdom of Saudi Arabia achieved qualitative leaps in digital transformation for organizations from rank (105) in 2003 to rank (44) in 2016 (Electronic Government Program, 2016). The transformation process requires that the administrative leaders and employees in the organizations to possess certain skills. In this regard, Groysberg (2014) suggested that the technological skills to deal with ICTs are among the most important seven skills to be possessed by executive managers. Consequently, ICTs have great effects on both the society and the individuals. Technological developments, especially ICTs accelerated rapidly in the last twenty-five years (Kurzweil, 2000). The importance to develop certain digital skills for leaders led to the creation of a new sub field for electronic leadership. Electronic leadership may be defined as the social influence that can be achieved through using advanced information technologies (Montgomery et al, 2017: 528). It also

created a kind of virtual leadership where its effect lies in practicing the styles of leadership and influence using modern communication technologies (Al-Ghadier 2016). The rapid technological developments affected the accurate identification of the concept of information and communication technologies as it can be used in different contexts; the most important of which are; (1) technical systems related to ICT's; (2) communication tools (3) modern, comprehensive and developed total systems for ICT's such as different integration systems.

The ICTs systems across the organization include several systems; such communication systems, decision support systems, management information system and office management systems. Integrating ICTs in organizations, through complicated and costly enterprise resources platforms, became very important as a part of ICTs system itself. The leaders play a crucial role in selecting and implementing such systems (Wart et al, 2017). These systems help communication and interaction, and support structuring work environments, solve problems and promote digital transformation. The ICTs systems are very important for leaders and organizations now more than ever.

Second: Literature Review

This section reviews some related literature. Yousuf (1994) conducted a study that aimed to recognize the attitudes of administrative leaders towards computer in the United Arab Emirates. The study sample included (210). The most important conclusions were that the administrative leaders in the government agencies did not comprehend its importance and role in facilitating the process of planning, control, and taking decisions. The study also concluded some obstacles that limit the use of this technology such the lack of qualified individuals, the leaders were not convinced of the importance of this technology, and lack of necessary budget to provide computers.

Al-Shehri (1999) conducted a study that aimed to identify the internal approached adopted by government agencies to develop managers. The study conclusions revealed that the managers have positive attitudes towards some methods adopted to develop them including the efforts exerted to train them to help their career growth. The study recommended that it is imperative to make the managers aware of the importance of continuous development, self-education, and joining different training programs and courses.

Al-Beshi (2001) conducted a study with the purpose of diagnosing the reality of Saudi central administrative bodies and the proper means to develop them. The study recommended that it is very important to train administrative leaders on the practical and scientific methods for development and change. Fulantelli and Allegra (2003) carried out a study which focused on clarifying some research results related to the attitude of small firms towards ICTs, beside recognizing the main elements to overcome the obstacles that hinder the use of technologies, and the need for training. The study indicated the importance to overcome all obstacles, and the need for continuous training to avoid such obstacles.

Ma, Chung and Thorson (2005) conducted a study on government leaders in China in order to identify the extent of using information and communication technologies. The study conclusions stated that the leaders use ICTs in order to promote both the efforts to accelerate decentralized public administration and the government's ability to supervise main activities. Al-Fadiel (2006) carried out a study to recognize the reality of using computers by supervisors in the course of performing their tasks and the

e skill level they enjoy. The study population included (155) male supervisors and (200) female supervisors. The study results indicated that most supervisors use computers very well. The study recommended that those supervisors should join more training courses. Gupta, Subhasish, and Gupta (2008) carried out a study on the adoption of ICTs in government agencies in developing countries in order to apply e-government. The study suggested that expected efforts and performance, social impact, and soft circumstances positively influence the use of ICTs.

Abu qudais, et al., (2010) conducted a study in Jordan with the purpose of identifying the main factors influencing the attitudes of senior faculty staff members in Jordanian universities towards the use of ICTs regarding knowledge and training. The study surveyed (251) of faculty staff members. The study concluded that the staff members possess the basic skills and knowledge, as well as the positive attitudes towards training on technologies, and that there is a need to focus this training on ICTs.

Gawdat (2010) undertook a study aimed to recognize the reality of using computer by the Academic Leaders in Um Al-Qura University in order to accomplish their job responsibilities in the light of time management and the obstacles that limit its use. The researcher surveyed (166) of those leaders. The study revealed that the level of use was high, and the main obstacles were the rapid development in technology. The study recommended that it is important for academic leaders to join computer training courses. (Al-Harahsha,

2013) identify the degree of use of computers by the leaders at Jordanian schools, and the impact of gender, academic qualification, scientific progress, and years of service, The study sample consisted of (107) managers, the study indicated that there are no statistical significance differences that may be attributed to the academic qualification and years of experience.

Qureshi (2013) undertook a study that aimed to identify the leadership impact on the meaningful usage of ICTs through several interviews with leaders. The study concluded that the leaders enjoy a prominent role as critical factors when it comes to the implementation of ICTs. Those leaders also do not have to be experts in these technologies but they are in need of a vision to adopt the implementation process. They also possess the ability to support different implementation phases regarding career development, and the leaders feel they are good users of these technologies. The study recommended a clear vision to integrate these technologies, and the need to redefine the strategy to use ICTs for the optimal use of these technologies.

Al-Khithlan (2016) carried out a study with the purpose of identifying the reality of using administrative information systems in Salman bin Abdul Aziz University in the Kingdom of Saudi Arabia from the point of view of administrative and academic leaders in the University. The study population consisted of (243) deans, supervisors, heads of divisions and managers of departments. The study sample was (98). The study revealed that these systems are used in a satisfactory way to a certain extent, and that there are statistically significant differences that are attributed to the academic qualification regarding the reality of the administrative information systems between the responses of MA holders and PhD holders in favor of the PhD holders. There were no statistically significant differences among the responses of study sample that are attributed to the years of experience.

Noti and Liaz (2016) conducted a study that aimed to realize the attitudes of managers and entrepreneurs in tourist organizations towards the use of ICTs and how these attitudes influence the image and decision taking. The study was carried out on a sample of (208) of managers and entrepreneurs numbering. The study stated that the majority of study sample think that ICTs provide valuable information and promote proper decision taking processes. ICTs also provide them with access to information and sharing such information with great ease. The attitudes towards such technologies have a positive relation when used with the purpose of gaining knowledge.

Al-Qahtani (2017) performed a study that aimed to recognize the role of developing administrative leaders in improving the organizational performance in the Emirate of Riyadh Province. The study suggested that the administrative leaders at the Province are developed through increasing performance level to reach the excellence level, and the training needs to train administrative leaders are identified in a scientific way using modern technologies. The study revealed that there are some obstacles facing the development of administrative leaders and they are represented in low financial and morale incentives, lack of financial resources, and lack of modern technologies in some leadership positions. Atanasoff and Vena (2017) indicated, in their study on the pressures produced by technology when used on different workers in the organization, that although the use of technology might promote the efficiency of work environment, productivity and flexibility, the technological tools may have reverse effects on the physical, cognitive and psychological health of individuals. They may also have reverse effects on organizations regarding low satisfaction and commitment.

Manuel, et al., (2017) conducted a study in Spain to recognize the critical factors in adopting ICTs by those responsible for small enterprises. The study sample consisted of (148) enterprises. The study concluded that the training directed to the entrepreneurs in fields related to ICTs might limit the negative effect resulting from the increasing aging of the employer in using ICTs.

SECTION IV: CONCLUSIONS AND RECOMMENDATIONS

First: Characteristics of study sample: to answer the first question, "What are the organizational and personal characteristics of administrative leaders in the government agencies?" the characteristics of the sample were as shown in the next table:

Table (1): Frequency and percentage of study sample characteristics

| | Variable | Frequency | % |
|------------------------|-------------------------|-----------|------|
| Academic Qualification | Bachelor Degree | 62 | 36.9 |
| | MA | 92 | 54.8 |
| | PhD | 8 | 4.8 |
| | Other | 6 | 3.6 |
| | Total | 168 | 100% |
| Age | Less than (35) years | 46 | 27.4 |
| | From (35) to (45) years | 98 | 58.3 |
| | More than (45) years | 24 | 14.3 |
| | Total | 168 | 100% |
| Years of Experience | Less than (5) years | 18 | 10.7 |

| Variable | | Frequency | % |
|---------------------------------|-------------------------|-----------|------|
| | From (5) to (10) years | 36 | 21.4 |
| | From (10) to (15) years | 77 | 45.8 |
| | More than (15) years | 37 | 22 |
| | Total | 168 | 100% |
| Job Category | Department Manager | 72 | 42.9 |
| | General Manager | 86 | 51.2 |
| | Assistant Deputy | 6 | 3.6 |
| | Deputy | 4 | 2.4 |
| | Total | 168 | 100% |
| Training provided by the agency | Yes | 168 | 100 |
| | No | 0 | 0 |
| | Total | 168 | 100% |
| Training by individual efforts | Yes | 158 | 94 |
| | No | 10 | 6 |
| | Total | 168 | 100% |
| ICTs individual literacy | Great | 129 | 76.8 |
| | Average | 21 | 12.5 |
| | To some extent | 14 | 8.3 |
| | Illiterate | 4 | 2.4 |
| | Total | 168 | 100% |

Table (1) shows that more than half study sample (55%) hold MA degrees, while (37%) hold Bachelor degrees. The ages of more than half study sample (58.3%) range between (35) and (45) years. More than half study sample (51.2%) work as General Managers. All study sample (100%) receive training from the organization they work in. About (94%) receive training by individual efforts. About (77%) think that they are familiar with ICTs to a great extent, while (2.4%) think that they are illiterate regarding ICTs.

Second: to answer the following question: “What is the attitude of administrative leaders towards training them on ICTs in government agencies”, and to test the zero hypothesis, “The average attitude of administrative leaders towards training them on ICTs in government agencies is less than the hypothetical average”, the researcher specified (30) phrases that can measure the attitudes of the administrative leaders according to Likert-Five Scale. The grand mean for total answers was extracted, and the agreement degree and explanation were determined to answer the first question according to the adopted average scale as shown in the following table.

Table (2): the average scale used to explain the attitudes of total answer of study sample.

| Average | Degree |
|-----------------------|---------|
| From (1) to < (2.5) | Weak |
| From (2.5) to < (3.5) | Average |
| From (3.5) to < (5) | Strong |

Table (3) explains the means, standard deviations and explanation degree for sample responses. The mean for participants' responses for all phrases stated in the questionnaire was (3.71) which is considered strong. This denotes that the administrative leaders have positive attitudes towards their training on ICTs in government agencies.

Table (3): Arithmetical mean, standard deviation and explanation degree for sample responses regarding their training on ICTs.

| N | Phrase | M | Std. | Explanation Degree |
|----|---|------|-------|--------------------|
| 1 | Is one of the main methods to train administrative leaders | 4.24 | 0.86 | Strong |
| 2 | Helps to develop the leader's capabilities to be effective | 3.73 | 1.19 | Strong |
| 3 | The agency allocated enough budget for training | 2.93 | 1.19 | Medium |
| 4 | Helps to develop and expand knowledge | 3.44 | 1.30 | Medium |
| 5 | The agency provides several diverse training packages | 3.76 | 1.19 | Strong |
| 6 | Training styles on technologies is varied in the agencies | 3.26 | 1.26 | Medium |
| 7 | The training provided suits the individual not the agency | 3.41 | 1.20 | Medium |
| 8 | It keeps pace with acceleration in technologies these days | 3.81 | 1.24 | Strong |
| 9 | Keep pace with the diversification of enriching resources | 4.20 | 0.963 | Strong |
| 10 | Requires the availability of sufficient financial resources | 4.31 | 0.811 | Strong |
| 11 | Requires available time for administrative leaders | 4.41 | 0.753 | Strong |
| 12 | Requires availability of suitable hardware and software | 4.33 | 1.91 | Strong |

| N | Phrase | M | Std. | Explanation Degree |
|--------------|---|-------------|-------------|--------------------|
| 13 | Achieves highest ROI in leaders | 3.70 | 1.25 | Strong |
| 14 | Designed as per the accurate needs of administrative leaders | 2.74 | 1.37 | Medium |
| 15 | Helps to achieve communication | 3.68 | 1.19 | Strong |
| 16 | Requires proper administrative support to use technology | 3.95 | 1.12 | Strong |
| 17 | I do not possess basic technical skills to use technology | 3.11 | 1.27 | Medium |
| 18 | The agency does not possess the infrastructure for training on technology | 4.21 | 0.99 | Strong |
| 19 | Current training program at the agency do not suit me | 3.77 | 1.23 | Strong |
| 20 | Contributes in increasing work productivity in a better way | 4.38 | 0.88 | Strong |
| 21 | Contributes in performing work easily | 4.41 | 0.89 | Strong |
| 22 | Develops the skills of administrative leaders at work | 3.78 | 1.22 | Strong |
| 23 | Promotes achieving the highest accuracy at work | 4.49 | 0.71 | Strong |
| 24 | Planning and Development Departments do not contribute largely in developing administrative leaders with regard to using technology | 4.28 | 0.81 | Strong |
| 25 | The agency possess a clear vision to integrate technology in work | 3.66 | 1.12 | Strong |
| 26 | Requires the proper will from administrative leaders | 3.87 | 1.08 | Strong |
| 27 | The agency does not possess proper plans for training on technology | 2.79 | 1.31 | Medium |
| 28 | The focus is on theoretical training more than practical training | 3.63 | 1.12 | Strong |
| 29 | Training programs provided at the agency are few and unavailable continuously | 3.87 | 1.22 | Strong |
| 30 | Low incentives for training on technology at the agency | 4.05 | 1.13 | Strong |
| Total | | 3.79 | 1.13 | Strong |

To confirm the attitudes of study sample towards their training on ICTs, and to test the zero hypothetical test, “the average attitudes of administrative leaders towards their training on ICTs in the government agencies is less than the hypothetical average (3)”. The One-Sample T Test (t) was adopted to test that the value of the mean is more than or equal to the value of the hypothetical average of the scale (3) as per the adopted Likert-Five Scale at the significance level (0,001%) to verify the statistical function. This indicates that study sample does not possess positive attitudes towards training them on ICTs.

Table (4): (t) Test for sample responses

| N | Phrase | M | Std. | t | Significance | Order |
|----|---|------|------|--------|---------------|-------|
| 1 | Is one of the main methods to train administrative leaders | 4.24 | 0.86 | 18.59 | Significant | 7 |
| 2 | Helps to develop the leader's capabilities to be effective | 3.73 | 1.19 | 7.93 | Significant | 19 |
| 3 | The agency allocated enough budget for training | 2.93 | 1.19 | -0.744 | Insignificant | 28 |
| 4 | Helps to develop and expand knowledge | 3.44 | 1.30 | 4.38 | Significant | 24 |
| 5 | The agency provides several diverse training packages | 3.76 | 1.19 | 8.23 | Significant | 18 |
| 6 | Training styles on technologies is varied in the agencies | 3.26 | 1.26 | 2.69 | Insignificant | 26 |
| 7 | The training provided suits the individual not the agency | 3.41 | 1.20 | 4.44 | Significant | 25 |
| 8 | It keeps pace with acceleration in technologies these days | 3.81 | 1.24 | 8.48 | Significant | 15 |
| 9 | Keep pace with the diversification of enriching resources | 4.20 | 0.96 | 16.17 | Significant | 9 |
| 10 | Requires the availability of sufficient financial resources | 4.31 | 0.81 | 20.92 | Significant | 5 |
| 11 | Requires available time for administrative leaders | 4.41 | 0.75 | 24.29 | Significant | 2 |
| 12 | Requires availability of suitable hardware and | 4.33 | 1.91 | 14.44 | Significant | 4 |

| N | Phrase | M | Std. | t | Significance | Order |
|----|---|------|------|-------|---------------|-------|
| | software | | | | | |
| 13 | Achieves highest ROI in leaders | 3.70 | 1.25 | 7.28 | Significant | 20 |
| 14 | Designed as per the accurate needs of administrative leaders | 2.74 | 1.37 | -2.48 | Insignificant | 30 |
| 15 | Helps to achieve communication | 3.68 | 1.19 | 7.43 | Significant | 21 |
| 16 | Requires proper administrative support to use technology | 3.95 | 1.12 | 10.93 | Significant | 12 |
| 17 | I do not possess basic technical skills to use technology | 3.11 | 1.27 | 1.09 | Insignificant | 27 |
| 18 | The agency does not possess the infrastructure for training on technology | 4.21 | 0.99 | 15.72 | Significant | 8 |
| 19 | Current training program at the agency do not suit me | 3.77 | 1.23 | 8.17 | Significant | 17 |
| 20 | Contributes in increasing work productivity in a better way | 4.38 | 0.88 | 20.25 | Significant | 3 |
| 21 | Contributes in performing work easily | 4.14 | 0.89 | 16.46 | Significant | 10 |
| 22 | Develops the skills of administrative leaders at work | 3.78 | 1.22 | 8.28 | Significant | 16 |
| 23 | Promotes achieving the highest accuracy at work | 4.49 | 0.71 | 27.20 | Significant | 1 |
| 24 | Planning and Development Departments do not contribute largely in developing administrative leaders with regard to using technology | 4.28 | 0.81 | 20.45 | Significant | 6 |
| 25 | The agency possess a clear vision to integrate technology in work | 3.66 | 1.12 | 7.68 | Significant | 22 |
| 26 | Requires the proper will from administrative leaders | 3.87 | 1.08 | 10.37 | Significant | 13 |
| 27 | The agency does not possess proper plans for training on technology | 2.79 | 1.31 | -2.06 | Insignificant | 29 |

| | | | | | | |
|----------------------|---|-------------|-------------|--------------|--------------------|----|
| 28 | The focus is on theoretical training more than practical training | 3.63 | 1.12 | 7.31 | Significant | 23 |
| 29 | Training programs provided at the agency are few and unavailable continuously | 3.87 | 1.22 | 9.22 | Significant | 14 |
| 30 | Low incentives for training on technology at the agency | 4.05 | 1.13 | 12.11 | Significant | 11 |
| Total Average | | 3.79 | 1.13 | 10.51 | Significant | |

Table (4) shows that the means for all phrases is (3.79) out of (5) degrees, and the standard deviation is (1.13) which reflects alignment in the points of view of study sample. It is also clear that (t) value is (10.51) which is a statistically significant value at the significance level (0.001%). This denotes that the differences in the study sample responses is considered significant differences in research population, and this can enable mainstreaming of study conclusions. This denotes the rejection of zero hypothesis and the acceptance of alternative hypothesis.

Table (4) illustrated, the values of the means for all phrases ranged in its minimum from (2.74) for the phrase “Training is designed as per the accurate needs of administrative leaders”, to its maximum value amounting to (4.49) for the phrase, “Training promotes achieving the highest accuracy at work”, and the order of phrases as per the attitudes. This results conforms, on the whole, regarding the use of ICTs and the positive attitude towards it, with the conclusions of (Ma, Chung and Thorson, 2005) study in China. It also conforms to the conclusions of (Abu Qudais, Al-Adhialeh, and Al-Omari, 2010) with regard to the positive attitudes towards training on ICTs, and with the conclusions of (Qureshi, 2013) regarding that the leaders think they are skilled in using such technologies, which denoted a positive attitude towards ICTs. These conclusions also agree with the conclusions of (Al-Shehri, 1999) in that the administrative leaders possess positive attitudes towards their training including training on ICTs which will help career development.

Third: to answer the third question, “Is there any effect of organizational and individual characteristics of administrative leaders (academic qualification, age, years of experience and job category) on their attitudes towards training on ICTs”, and to test the emanating zero hypothesis, “There are no statistically significant differences between the attitudes of administrative leaders towards training on ICTs and their organizational and individual characteristics (academic qualification, age, years of experience and job category). The One-Way ANOVA test was adopted due to the multiplicity of sub variable categories. The test at the significance level (0.05), as shown in table (5), that the academic qualification has no influence on the attitudes of administrative leaders towards training on ICTs, as the (F) value is (0.891) which is considered a statistically insignificant value at the significance level (0.05), $F=0.891$, $MS=0.463$, $p>0.05$ (0.670). It was clear that age has no influence on the attitudes of administrative leaders towards training on ICTs, as the (F) value is (1.02) which is considered a statistically insignificant value at the significance level (0.05), $F=1.02$, $MS=0.406$, $p>0.05$ (0.448). It became also evident that years of experience have no influence on the attitudes of administrative leaders towards training on ICTs as the (F) value is (1.21) which is considered a statistically insignificant value at the significance level (0.05), $F=1.21$, $MS=0.946$, $p>0.05$ (0.200). It appeared also that job category has no influence on the attitudes of administrative leaders towards training on ICTs, as the (F) value is (0.677) which is considered a statistically insignificant value at the significance level (0.05), $F=0.677$, $MS=0.333$, $p>0.05$ (0.938). The previous results indicate the approval of zero hypothesis, which means that the organizational and individual characteristics of administrative leaders has no influence on their training on ICTs. This result conforms to the results of (Al-Harahsha, 2013) indicating that there are no statistical significance

differences that may be attributed to the academic qualification and years of experience.

Table (5): Analysis of Variance ANOVA of the influence of some organizational and individual characteristics towards their training on ICTs

| Variable | MS | F | P | Significance (0.05) |
|-------------------------------|-------|-------|-------|---------------------|
| Academic Qualification | 0.346 | 0.640 | 0.937 | Insignificant |
| Age | 0.452 | 1.16 | 0.269 | Insignificant |
| Number of Years of Experience | 0.937 | 1.18 | 0.252 | Insignificant |
| Job Category | 0.540 | 1.29 | 0.150 | Insignificant |

Fourth: to answer the question, “What are the main obstacles hindering the training of administrative leaders on ICTs”, the researchers specified some obstacles that may limit the training of administrative leaders on using technologies. These obstacles were ordered as per the responses of study sample as shown in the following table (6).

Table (6): the obstacles limiting the training of administrative leaders on using ICTs

| N | Variable | | Respondents | Non-respondents | Total |
|----|---|-----------|-------------|-----------------|-------|
| 1 | Unavailability of time for administrative leaders to train on ICTs | Frequency | 153 | 15 | 168 |
| | | (%) | 91% | 9% | 100% |
| 2 | Unwillingness of the administrative leaders to train | Frequency | 136 | 32 | 168 |
| | | (%) | 81% | 19% | 100% |
| 3 | Weak infrastructure for training in the agency | Frequency | 124 | 44 | 168 |
| | | (%) | 74% | 26% | 100% |
| 4 | Weak programs and applications available for training | Frequency | 114 | 54 | 168 |
| | | (%) | 68% | 32% | 100% |
| 5 | Diversity and multiplicity of ICTs | Frequency | 112 | 70 | 168 |
| | | (%) | 67% | 33% | 100% |
| 6 | Weak training plans in the agencies to train administrative leaders | Frequency | 110 | 58 | 168 |
| | | (%) | 65% | 35% | 100% |
| 7 | Rapid development of ICTs which affect the training | Frequency | 108 | 60 | 168 |
| | | (%) | 64% | 36% | 100% |
| 8 | Unavailability of administrative support for training | Frequency | 102 | 66 | 168 |
| | | (%) | 61% | 39% | 100% |
| 9 | Unavailability of technical support for training | Frequency | 100 | 68 | 168 |
| | | (%) | 60% | 40% | 100% |
| 10 | Inefficiency of training providers on using ICTs | Frequency | 98 | 70 | 168 |
| | | (%) | 58% | 42% | 100% |
| 11 | Training patterns provided are weak | Frequency | 96 | 72 | 168 |
| | | (%) | 57% | 43% | 100% |
| 12 | Insufficient budget for training on technology in the agencies | Frequency | 88 | 80 | 168 |
| | | (%) | 52% | 48% | 100% |

Table (6) indicates that more than half of the sample believe that there are obstacles that limit their training on ICTs in the agencies they work in. The percentage of those range from (52%) to (91%). The previous table shows the order and the approval rate of these obstacles. It was evident that (91%) of administrative leaders who are subjects of the study think that the unavailability of time for them to train on ICTs is one of the main obstacles that limit their training. This is followed by the unwillingness of the administrative leaders to train at the rate of (81%), followed by weak infrastructure designed for training at the rate of (74%). These conclusions conform to the conclusions of Al-Qahtani study (2017)

regarding lack of modern technologies in some administrative positions. The following obstacle is the rapid development in ICTs at the rate of (64%), which conforms to the results of Gawdat study (2010) stating that the main obstacle for using and keeping pace with these technologies is the rapid development in technology. The next obstacle is the unavailability of administrative support for training at the rate of (61%), and finally insufficient budget for training on ICTs at the rate of (52%). This result agrees with the result of Yousuf study (1994) which stated that one of the main obstacles the limit the attitudes is the insufficient budget necessary to provide such technologies. It also conforms with Al-Qahtani study (2017) stating that one of the obstacles is the insufficient financial resources necessary to finance the administrative development programs for leaders.

Fifth: Recommendations

The study, based on the data and results, recommends the following:

Attending to training the administrative leaders by government agencies on ICTs as per the new development in the field of technology.

Preparing training plans suitable for administrative leaders in a way that enables them to train on ICTs.

Seeking to provide sufficient budgets to train the administrative leaders on ICTs.

The government agencies should attempt to continuously measure the skills and capabilities of administrative leaders in the field of using ICTs and bridging the gap in the training needs for administrative leaders.

Providing the proper training environment according to the needs of administrative leaders including laboratories, programs, applications and proper training patterns to train them on ICTs.

The administrative leaders should seek self-training in the field of ICTs according to the available time and effort they may spare and in a way that achieves their needs for gaining more knowledge and skills towards using ICTs.

The proper selection of training patterns and providers in a way that aligns with the needs of administrative leaders.

Sixth: Future Studies

In the light of study conclusions and recommendations, the researcher suggests the following future studies:

1. Realty and challenges of training administrative leaders on the use of ICTS.
2. Prospecting the requirements and the needs of administrative leaders in the government agencies towards training on ICTs.
3. The readiness of government agencies to train the administrative leaders on using ICTs.
4. A comparative study on the use of administrative leaders in public sector and private sector to ICTs.
5. The influence of training the administrative leaders in government agencies on ICTs on the performance quality and decision-making.

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