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## **Role of Extrinsic and Intrinsic Motivation on Satisfaction in e-Learning In Kuwait: An Experimental Study**

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### **ABSTRACT**

This research focusses on the role played by *intrinsic* and *extrinsic motivation* on *perceived satisfaction* of students in higher education through e-learning with *perceived usefulness* and *confirmation* as mediating variables. The research is based on positivist paradigm. The researchers adopted the experimental approach for testing seven hypotheses using structural modelling technique on a randomly chosen sample (n=212). The respondents were students at graduate level in the Education Technology in a governance-oriented institute in Kuwait. The hypotheses testing indicated that it is only the intrinsic motivation of the students that can significantly influence confirmation as well as perceived usefulness and provide satisfaction in e-learning. Theoretical implication has been the proposition of two additional dimensions to the confirmation-expectation theory. Practical implications come in the form of suggestions to the stakeholders of e-learning in Kuwait to make e-learning satisfactory to the students.

**Keywords:** Confirmation-expectation theory, Extrinsic motivation, Intrinsic motivation, Perceived usefulness, Educational technology.

### **Introduction**

E-learning is becoming popular around the globe. The State of Kuwait is included, and e-learning has become an important topic of

research to both academics and practitioners. Technology acceptance, behavioural aspects, learning theories, performance enhancement and social impact are popular themes of research in e-learning. However, most of these are theoretical in nature and are based in the context of western countries. Na, Petsangsri & Tasir (2020) tested the relationship between academic performance and motivation in the context of e-learning. It was found that there is a positive correlation between motivation and academic performance. Hijazi & AlNatour (2020) tested the relationship between achievement and motivation in blended learning. The two groups were tested; one being on traditional mode of learning in classroom and the other on the blended mode, and it was found that the relationship between achievement and learning was stronger in the blended mode of learning. There are well developed models which have been empirically validated in various contexts of technology usage such as education, healthcare, governance, industries etc. Most of these studies were undertaken in western countries. Thus, there is a need to test these models in the context of Middle Eastern countries so that the generalization of the existing theories and models can be extended further.

Diversification on streams of research in e-learning is also found in Kuwait. In a comparative study between Kuwait and Western countries on the barriers in implementing e-learning, Ali & Magalhaes (2008) found that in the western countries only IT problems, workload and lack of time were the barriers, where as in Kuwait in addition to these barriers, lack of management support and language handicap were also prominent. Hayashi et al. (2020) studied the role of social presence as well as the mediating role of self-efficacy in e-learning systems. In their study even though they have considered the satisfaction level as well as the intention to use, motivation towards e-learning is ignored completely. Al-Doub, Goodwin & Al-Hunaiyyan (2008) found that there was a significant difference in students' attitudes towards e-learning based on gender as well as the governance of the institute. Al-Fadhli & Khalfan (2009) through a comparative study of traditional and e-learning modes of education found that critical thinking was better in the e-learning environment and male students outperformed female students. Etedali (2009) in the context of English language learning through e-learning identified that IT skills, positive perceptions, creativity, and responsi-

bility of the trainers are critical for effectiveness. There are some studies on e-learning specifically focussed in Arab countries even though majority of the studies are in the context of western countries. For instance, Mustofa, Ahmadi & Karimullah (2020) have focussed on Islamic Character Education in the e-learning model. The research has proposed the participatory action research by the students and the teachers so that the students get self-motivated through their involvement in learning Islamic character. Safar (2012) made an attempt to capture student perspectives of online training in Kuwait University and observed reaction-based satisfaction among students through on-line-learning. The study also identified the positive feelings, perceptions and attitude towards online learning. Aldhafeeri & Khan (2016) found that in general both students and teachers in Kuwait strongly felt that the schools were technologically ready for e-learning. However, there was difference in their views with respect to their gender (male / female). Both students and teachers were confident about the use of technology involved in e-learning, but had concerns over communication skills required for online interaction. Some of the recommendations were to conduct training to teachers in online pedagogy, create awareness about the institution's capability on e-learning, develop communities of practice, and focus on building the technical skills in connection to e-learning. These are some of the studies undertaken in Kuwait in connection to e-learning and other forms of technology based learning. A clear need to undertake an in-depth study on motivational issues of the students towards e-learning leading to satisfaction is identified and this study is an attempt in that direction.

## Literature Review

Ever since Information and Communication Technologies (ICTs) became an integral part of learning, study of behavioural influences on technology usage has become a prominent area of research. While there are several streams of research on this topic, the impact of student motivation towards E-learning has been one of the prominent areas of research.

Ramayah, Jantan & Ismail (2003) investigated the impact of motivation on internet usage in 11 states in Malaysia based on convenience sampling and found that *perceived usefulness*, *perceived*

*enjoyment* and *perceived ease of use* were the main motivators. Lordache et al. (2015) studied the motivational factors on Facebook usage by the Lithuanian university students and found that *perceived enjoyment* was the main motivational factor. Sabah (2013) studied the students' attitude and motivation towards e-learning in Alquds Open University (sample size of 100 based on random sampling) while learning through: face-to-face learning, blending learning, virtual classrooms and video streaming. The survey design using 33-item questionnaire was adopted in the study. Results indicated that the students showed higher motivation towards both blended learning and face-to-face learning. Harandi (2015) conducted a research to study the motivation of students towards e-learning in Tehran Alzahra University with a sample size of 140 based on random sampling. Results indicated that the students are highly motivated towards e-learning strategy; the main factors being the content of the course, economic aspects and the ICT facilities. While there are many similar studies investigating the role of motivation on e-learning of the students not many have focussed on the two components of motivation: extrinsic and intrinsic motivation.

While the extrinsic motivation is through goal oriented behaviour, the intrinsic motivation is hedonic, being related to enjoyment and inherent satisfaction created through individual actions (Davis, Bagozzi & Warshaw, 1992; Venkatesh & Speier, 2000). According to the Motivational Model (Taherdoost, 2018), *extrinsic motivation* is defined as, "the perception that users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance and *intrinsic motivation* is defined as the perception that users will want to perform an activity for no apparent reinforcement other than the process of performing the activity per se" (p. 963).

This research focusses on the study of aforementioned components of *motivation* on *satisfaction* of the students through e-learning under the mediation of *confirmation* and *perceived usefulness*. *Confirmation* refers to the congruence between expectation and performance of a product or service as perceived by the students (Bhattacharjee, 2001). Perceived usefulness in the context of e-learning is the extent to which

the user believes that e-learning would enhance his or her learning performance in the course and provide satisfaction with learning; (Lin, 2012).

The conceptual model of this research originates from Expectation-confirmation model (ECM) (Oliver, 1980), which establishes the relationship between expectation and confirmation. According to the ECM theory, if the product/service meets or outperforms expectation of the customer, confirmation takes place which leads to satisfaction, and on the other hand if the product/service falls short of expectations then dis-confirmation takes place resulting in dissatisfaction (Jiang & Klein, 2009). Ifinedo (2018) applied the ECM theory to study the students' weblogs continuance usage intention in a university in Canada using a random sample of 108 students. The finding of the study was that perceived fit, perceived individual learning support, perceived usefulness, and confirmation had a positive relationship with the satisfaction in weblog usage by the students in higher education. While there are similar studies on the impact of expectation and confirmation on satisfaction in a given service received, the research gap lies in the availability of an empirically tested model that defines students' perceived satisfaction in the e-learning context, and hence this research.

## Research Methodology

### Research Model and Hypotheses

The research model establishes link between *extrinsic motivation* and *intrinsic motivation* to *satisfaction* in e-learning through the intermediation of *perceived usefulness* and *confirmation* (Figure 1).

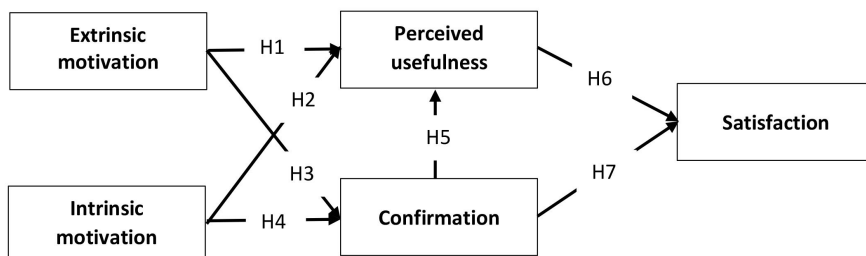


Figure 1

Research Model

### **Linkage between Motivation and Perceived Usefulness**

Karkar, Fatlawi & Al-Jobouri (2020) tested the relationship between motivation and perceived usefulness using 100 female students in a university in Jordan, selected thorough purposeful sampling in the context of learning English through blended learning. The relationship was found to be stronger in terms of statistical significance in the experimental group in comparison to the control group. Chan et al., (2017) in the context of learning of programming through cloud-based tool in a Java MOOC environment using questionnaire survey and convenience sampling found that the interactive model of learning motivated the students to perceive the tool as useful in learning programming. Ramayah et al., (2003) studied the impact of both intrinsic and extrinsic motivation in the context of internet usage in 11 states of Malaysia through convenience sampling and found that intrinsic motivation had an impact on perceived usefulness, however extrinsic motivation failed to have an impact. Iordache et al., (2015) through a questionnaire survey on a sample size of 152 (110 - female and 42 - male) found that perceived enjoyment through intrinsic motivation leads to the perceived usefulness. Perceived usefulness is by and large considered as an extrinsic motivation and perceived enjoyment as an intrinsic motivation (Davis, Bagozzi & Warshaw, 1992) even though the empirical evidence for such a conclusion is not very evident. These research studies form the basis for the formulation of the following hypotheses:

H<sub>1</sub>: *Extrinsic motivation* has a significant relationship with *perceived usefulness*.

H<sub>2</sub>: *Intrinsic motivation* has a significant relationship with *perceived usefulness*.

### **Linkage between Motivation and Confirmation**

Cheng (2020) tested the E-learning in the context of medical education with a sample size of 368 and established the relation between motivation and confirmation as per the expectation-conformation model. Ifinedo (2018) identified that *motivation* can lead to *confirmation*, as perceived fit and perceived individual learning support act as strong motivational factors leading towards confirmation. The argument was that the Information and Communication Technologies (ICTs) can create new insights to the identification of learning needs in a learner, which could act as the motivational factors. Moreover, system

design with user-interface promotes the ease of use and interaction between human and technology make the users confirm the belief that the more they use the technology the more they will be conversant with it (Cheng, 2014; Liao, Huang & Wang, 2015). Researchers have found that the value attached to the product, quality perception, functionality of the product, and usability of e-learning products have positively influenced the students' confirmation about the product usage (Chen, 2011; Chiu et al., 2005). These studies have related motivation to confirmation, but there is not much of evidence for the studies in which the two types of motivation have been studied for their influence on confirmation and hence following hypotheses have been formulated.

H<sub>3</sub>: *Extrinsic motivation* has a significant relationship with *confirmation*.

H<sub>4</sub>: *Intrinsic motivation* has a significant relationship with *confirmation*.

### **Linkage between Confirmation and Perceived Usefulness**

Al-Shurideh, Al-Kurdi&Salloum (2019) using a sample size of 448 students on e-learning mode in the UAE Higher Education found that expectation-confirmation factors had significant influence on perceived ease of use, perceived usefulness and satisfaction. Expectation Confirmation Model (ECM) posits that *perceived usefulness* of ICT increases with *confirmation* of the existence of the expected benefits of using such systems (Ifinedo, 2018). There are research studies on expectation confirmation on various aspects of human behaviour. Oliver (1980) successfully linked expectation to confirmation theoretically. Bhattacharjee (2001) has provided evidence for the role of confirmation on perceived usefulness of Information System through the user intention. Davis (1989) provided proof for the positive influence of confirmation on perceived usefulness. Lin (2012) has found that in the context of learning Management Information System confirmation had an influence on perceived usefulness. Similarly, there are several other studies in which researchers have proved that confirmation has a role to play in the perceived usefulness of a technology in various contexts of technology usage (e.g., McGill & Klobas, 2009; Terzis, Moridis & Economides, 2013). However, in the context of e-learning technologies, the influence of confirmation on perceived usefulness is yet to be studied and hence the following hypothesis has been developed.

H<sub>5</sub>: *Confirmation* has a significant relationship with *perceived usefulness*.

### **Linkage between Perceived Usefulness and Satisfaction**

Kerižič et al. (2019) investigated the critical factors associated with perceived usefulness in the context of e-course in blended learning and found that students' attitudes had a role to play on perceived usefulness that can provide user's satisfaction. There is a general consensus among researchers as derived through the Expectation Confirmation Model (Ifinedo, 2018) that if the user perceives a technology to be useful, he/she would be satisfied after its use. Many researchers on various contexts have found this association between perceived usefulness and satisfaction, e.g., Limayem & Cheung (2008) in information management and Sørebo et al. (2009) in computer education. Tang, Tang & Chiang (2014) have established causation between perceived usefulness of blog learning and satisfaction in learning. Chen, Lai & Ho (2015) have substantiated the same point in computer education. However, there is no much evidence for the study in this direction despite the fact that e-learning is becoming popular in the Gulf region, and hence the following hypothesis is formulated.

H<sub>6</sub>: *Perceived usefulness* has a significant relationship with *satisfaction*.

### **Linkage between Confirmation and Satisfaction**

Cheng (2020) established the relationship between confirmation and satisfaction in the context of cloud-based e-learning Expectation Confirmation Model (Jiang & Klein, 2009) theory mentioned before establishes that it is *confirmation* or *disconfirmation* which leads to *satisfaction* or *dissatisfaction* of the user. The theory has been tested by many researchers. For instance, Stone & Baker-Eveleth (2013) in the context of electronic books usage has established relationship between confirmation and satisfaction. It was found that if students can develop confirmation that the use of technology in learning will provide them better opportunity to learn, they will develop satisfaction in learning (Ifinedo, 2018). There is evidence for the fact that confirmation has led to satisfaction on various contexts; e.g., information management (Limayem & Cheung, 2008), computer learning (Stone & Baker-Eveleth, 2013), simulation games (Liao, Huang & Wang, 2015). However, there has not been many studies in similar lines on the e-learning context, and hence, the following hypothesis has been formulated.

H<sub>7</sub>: *Confirmation* has a significant relationship with *satisfaction*.



## Research Design

This research adopted survey research design. The sample frame is the list of students undergoing Bachelor Degree in Educational Technology on e-learning mode in The Public Authority for Applied Education & Training in Kuwait. Permission for the survey was taken from the Head of the institute. Participation was voluntary and confidentiality statement in the questionnaire ensured freedom of expression of the respondents on their perceptions on e-learning without any hesitation. The questionnaires in Google Forms were made available both in English and Arabic to the respondents.

## Sample Design

The study population comprises 1340 and the sample size required according to the standard formula is 165. However, to meet the minimum criterion of Structural Equation Modeling, a sample size of 212 was adopted. Randomly chosen 400 undergraduate students in e-learning were emailed the link of the Google form having the self-administered questionnaire and 212 filled questionnaires were obtained (response rate 53%).

## Questionnaire Development

The self-administered questionnaire used for data collection had two parts: the first part elicited the demographic information of the respondents (gender, age, year of study and employment status), and the second part obtained quantitative data through the Likert 5-point scale (5- Strongly agree; 1- Strongly disagree). The instrument was derived from the standard scales developed by a group of researchers used in many different contexts such as learning in physical education, primary schools and organizations and was slightly modified to suit the requirements of learning in distance education without diluting the content. The sources of these scales, their Cronbach Alpha in the earlier studies and the current study and also a sample item of the scale is shown in Table 1. The Cronbach Alpha values for the scale used in this research are in the acceptable range in comparison with earlier scales as of internal consistency and reliability.

**Table 1***Cronbach's Alpha of standard scales and current study*

| Dimension            | Sources of Scales                   | Cronbach's Alpha in Source | Cronbach's Alpha in Current Study | Sample Item                                                                |
|----------------------|-------------------------------------|----------------------------|-----------------------------------|----------------------------------------------------------------------------|
| Extrinsic motivation | Vallerand et al., (1992)            | 0.83                       | 0.92                              | I have better job prospects after the completion of the E-learning course. |
|                      | Vallerand & Blssonnette, (1992)     | 0.83                       |                                   |                                                                            |
|                      | Guay, Vallerand & Blanchard, (2000) | 0.89                       |                                   |                                                                            |
|                      | Tremblay et al., (2009)             | 0.77                       |                                   |                                                                            |
| Intrinsic motivation | Weissinger & Bandalos, (1995)       | 0.79                       | 0.85                              | E-learning gives me a sense of accomplishment.                             |
|                      | Lepper, Corpus & Iyengar, (2005)    | 0.9                        |                                   |                                                                            |
|                      | Uyulgan & Akkuzu, (2014)            | 0.8                        |                                   |                                                                            |
|                      | Monteiro, Mata & Peixoto, (2015)    | 0.87                       |                                   |                                                                            |
| Perceived usefulness | Davis (1989)                        | 0.97                       | 0.81                              | E-learning has improved my knowledge in the course.                        |
|                      | Jahangir, N., & Begum (2008)        | 0.64                       |                                   |                                                                            |
|                      | Balog & Pribeanu (2009)             | 0.82                       |                                   |                                                                            |
|                      | Hamid et al., (2016)                | 0.92                       |                                   |                                                                            |
| Confirmation         | Brown et al., (2008)                | 0.93                       | 0.89                              | The content of E-learning was better than my expectation.                  |
|                      | Chen et al., (2010)                 | 0.7                        |                                   |                                                                            |
|                      | Yu (2010)                           | 0.86                       |                                   |                                                                            |
|                      | Pereira et al., (2015)              | 0.9                        |                                   |                                                                            |
| Satisfaction         | Chen et al., (2010)                 | 0.7                        | 0.8                               | I am satisfied with the E-learning.                                        |
|                      | Angelova & Zekiri (2011)            | 0.86                       |                                   |                                                                            |
|                      | Manna, Singh & Bhargava (2015)      | 0.8                        |                                   |                                                                            |
|                      | Nhat & Quy (2016)                   | 0.7                        |                                   |                                                                            |

## Results and Analyses

### Demographics of Respondents

Majority of the respondents were males (68 percent) in the age group of 20 to 30 years 78%, followed by the age group of 31 to 40 years 16% and the rest were above 40 years of age. In terms of the year of graduation, the majority was freshmen 68% followed by sophomores 21% and the rest were juniors. Majority of the respondents were employed 64%.

### Measurement Model

As the factors were deducted from the original scale, there was a need to check the model for its goodness of fit. Initially some of the factors did not fit very well and hence it was revised based on the factor loadings. This resulted in the reduction of the original *a priori* 30- item scale to 15- item scale. The structural equation modelling needs at least three indicators for a given latent variable (Ullman, 2006), thus in this research three indicators have been chosen for each of the latent variables.

The GOF results for individual and full measurement models are within the acceptable range with non-significant  $\chi^2$  (Chi-square) ( $P > 0.05$ ) (Tabachnick & Fidell, 2007), Goodness Fit Index (GFI), Adjusted Goodness Fit Index (AGFI) and Tucker-Lewis Index (TLI) values are greater than 0.9 (Hooper, Coughlan. & Mullen, 2008) and Root Mean Square Error of Approximation (RMSEA) value less than 0.10 (Tabachnick & Fidell, 2007) Table 2. Thus, the model fit is acceptable and the data were fit to be subjected to further analyses.

**Table 2**

*The Goodness of Fit Indices*

| Construct     | No. of Items | $\chi^2$ | Df | p    | $\chi^2/\text{Df}$ | GFI  | AGFI | RMS-<br>EA | TLI  |
|---------------|--------------|----------|----|------|--------------------|------|------|------------|------|
| EXM- Initial  | 5            | 2453     | 4  | 0.01 | 613.25             | 0.91 | 0.85 | 0.04       | 0.95 |
| EXM - Final   | 3            | 2.4      | 2  | 0.16 | 1.20               | 0.94 | 0.93 | 0.06       | 0.96 |
| INM - Initial | 5            | 125.2    | 4  | 0.03 | 31.30              | 0.93 | 0.85 | 0.14       | 0.85 |
| INM - Final   | 3            | 1.54     | 2  | 0.34 | 0.77               | 0.87 | 0.95 | 0.13       | 0.95 |
| CNF - Initial | 5            | 122.3    | 4  | 0.03 | 30.58              | 0.91 | 0.93 | 0.07       | 0.92 |

**Table 2 Cont.***The Goodness of Fit Indices*

| Construct     | No. of Items | $\chi^2$ | Df | p     | $\chi^2/Df$ | GFI  | AGFI | RMS-<br>EA | TLI  |
|---------------|--------------|----------|----|-------|-------------|------|------|------------|------|
| CNF - Final   | 3            | 2.7      | 2  | 0.67  | 1.35        | 0.88 | 0.95 | 0.02       | 0.93 |
| PRU - Initial | 5            | 85.4     | 4  | 0.003 | 21.35       | 0.91 | 0.98 | 0.03       | 0.96 |
| PRU - Final   | 3            | 8.2      | 2  | 0.15  | 4.10        | 0.92 | 0.88 | 0.05       | 0.92 |
| SAT - Initial | 5            | 322.9    | 4  | 0.03  | 80.73       | 0.97 | 0.93 | 0.12       | 0.92 |
| SAT- Final    | 3            | 6.3      | 2  | 0.68  | 3.15        | 0.94 | 0.85 | 0.07       | 0.93 |

The Cronbach Alpha coefficient has the acceptable value ranging from 0.8 to 0.9, indicating a moderate to high level of internal consistency Table 3. The composite reliability estimate ranging from 0.7 to 0.9 indicating moderate to high reliability values. The convergent validity assessed based on factor loading  $> 0.6$  indicate a fairly good effect of the factors on the dimensions they represent Table 4. To test for discriminant validity, the square root of average variance extracted (AVE) for each construct was compared with the correlation between the construct and the other constructs. Acceptable discriminant validity between each pair of construct has been established with all square roots of AVE greater than the correlation between the constructs, tables 3-5.

**Table 3***Reliability and Validity Measures*

|     | AVE  | Composite<br>Reliability | R Square | Cronbach's<br>Alpha | Communal-<br>ity | Redundan-<br>cy |
|-----|------|--------------------------|----------|---------------------|------------------|-----------------|
| CNF | 0.69 | 0.87                     | 0.41     | 0.89                | 0.69             | 0.01            |
| EXM | 0.41 | 0.67                     | 0.00     | 0.92                | 0.41             | 0.00            |
| INM | 0.66 | 0.86                     | 0.00     | 0.85                | 0.66             | 0.00            |
| PRU | 0.63 | 0.84                     | 0.54     | 0.81                | 0.63             | 0.27            |
| SAT | 0.71 | 0.88                     | 0.59     | 0.80                | 0.71             | 0.33            |

**Table 4***Factor Loading of the Reduced Items*

| Confirmation | (CNF) | Extrinsic Motivation (EXM) | Intrinsic Motivation (INM) | Perceived Usefulness (PRU) | Satisfaction (SAT) |
|--------------|-------|----------------------------|----------------------------|----------------------------|--------------------|
| CNF1         | 0.83  |                            |                            |                            |                    |
| CNF2         | 0.83  |                            |                            |                            |                    |
| CNF3         | 0.82  |                            |                            |                            |                    |
| INM1         |       | 0.74                       |                            |                            |                    |
| INM2         |       | 0.71                       |                            |                            |                    |
| INM3         |       | 0.66                       |                            |                            |                    |
| EXM1         |       |                            | 0.86                       |                            |                    |
| EXM3         |       |                            | 0.80                       |                            |                    |
| EXM2         |       |                            | 0.79                       |                            |                    |
| PRU1         |       |                            |                            | 0.80                       |                    |
| PRU2         |       |                            |                            | 0.80                       |                    |
| PRU3         |       |                            |                            | 0.79                       |                    |
| SAT3         |       |                            |                            |                            | 0.88               |
| SAT1         |       |                            |                            |                            | 0.83               |
| SAT2         |       |                            |                            |                            | 0.82               |

**Table 5***Inter-item Correlations*

| Confirmation | (CNF) | Extrinsic Motivation (EXM) | Intrinsic Motivation (INM) | Perceived Usefulness (PRU) | Satisfaction (SAT) |
|--------------|-------|----------------------------|----------------------------|----------------------------|--------------------|
| CNF          | 0.83  |                            |                            |                            |                    |
| EXM          | -0.14 | 0.64                       |                            |                            |                    |
| INM          | 0.64  | -0.17                      | 0.81                       |                            |                    |
| PRU          | 0.69  | -0.14                      | 0.64                       | 0.79                       |                    |
| SAT          | 0.72  | -0.15                      | 0.62                       | 0.68                       | 0.84               |

**Structural Model**

The path coefficient values ranged from 0.02 to 0.63 (Table 6;

Figure 2) and the  $R^2$  values for perceived usefulness, confirmation and satisfaction were 0.54, 0.41 and 0.59 respectively, which is quite adequate in comparison to the other research studies in this field ( $R^2$  cut off 0.1). The t-values (Table 6 and Figure 3) indicate that the following hypotheses are supported:

H<sub>2</sub>: *Intrinsic motivation* has a significant relationship with *perceived usefulness*.

H<sub>4</sub>: *Intrinsic motivation* has a significant relationship with *confirmation*.

H<sub>5</sub>: *Confirmation* has a significant relationship with *perceived usefulness*.

H<sub>6</sub>: *Perceived usefulness* has a significant relationship with *satisfaction*.

H<sub>7</sub>: *Confirmation* has a significant relationship with *satisfaction*.

Also, the following hypotheses are not supported:

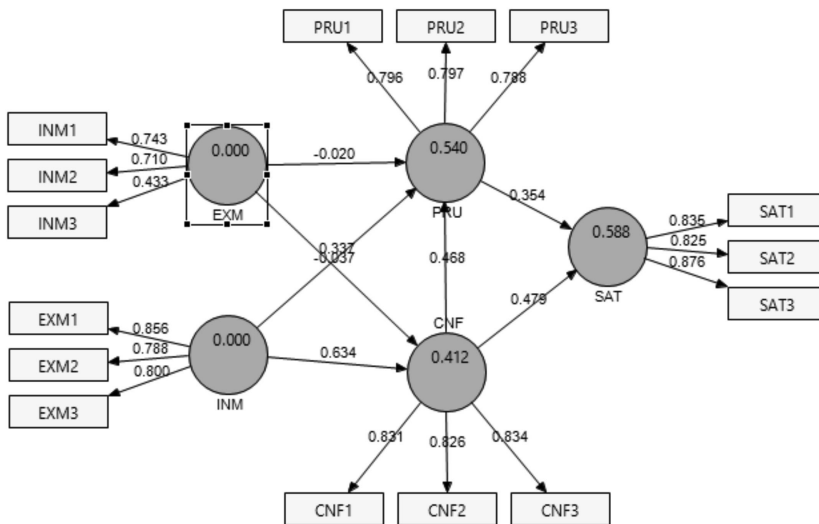
H<sub>1</sub>: *Extrinsic motivation* has a significant relationship with *perceived usefulness*.

H<sub>3</sub>: *Extrinsic motivation* has a significant relationship with *confirmation*.

The research has revealed that *intrinsic motivation* towards E-learning has a significant positive relationship with *perceived usefulness*. This finding is in accordance to some of the earlier findings on various contexts such as learning, technology usage, internet usage, multi-media usage and technology based services (Dimitriadis & Kyrezis, 2010; Iordache et al., 2015; Mujiyati & Achyari, 2009; Ramayah et al., 2003; Venkatesh, 2000). It is revealed that *intrinsic motivation* has a significant positive relationship with *confirmation* which is in consistency with the research findings by a group of researchers in various contexts which includes: weblog usage, E-learning, computer education, business simulation games (Cheng, 2014; Chen, 2011; Chiu et al., 2005; Ifinedo, 2018; Liao et al., 2015).

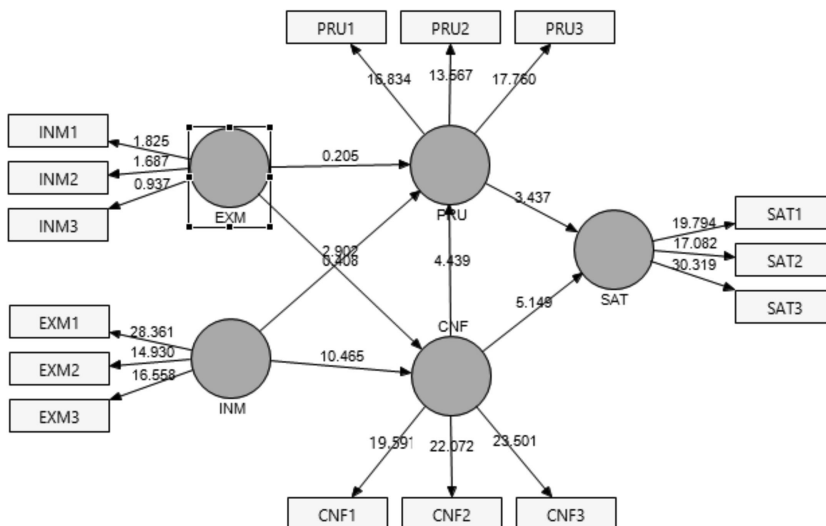
*Confirmation* is found to have a significant positive relationship with *perceived usefulness* in the E-learning context. Similar observations have been made by a group of researchers in various contexts such as technology usage, information systems learning and online learning, web applications (e.g., Baharum & Jaafar, 2015; Bhattacharjee, 2001; Davis, 1989; Ifinedo, 2018; Lin, 2012; McGill & Klobas, 2009; Terzis, Moridis & Economides, 2013). It was revealed that *perceived usefulness* has a significant positive relationship with *satisfaction* in e-learning. This result is in alignment with earlier research studies undertaken in the context of m-banking; online learning, and technology usage (e.g.,

Bhattacharjee, 2001; Chen et al., 2015; Ifinedo, 2018; Limayem & Cheung, 2008; Sørenbø et al., 2009; Tang et al., 2014). Results also indicate that *confirmation* is positively related to *satisfaction*. This outcome is in agreement with earlier researches in the context of e-banking, computer learning, technology usage, e-service, and internet usage (Ifinedo, 2018; Liao et al., 2015; Jiang & Klein, 2009; Limayem & Cheung, 2008; Stone & Baker-Eveleth, 2013). The relationship between confirmation, perceived usefulness and satisfaction is established by the ECM model (Oliver, 1980) and justified through this study. Besides, this study provides evidence to the fact that *intrinsic motivation* of the students plays a major role in developing the positive perception about the usefulness of the e-learning programme and also provides *confirmation* to the students in meeting their expectations. The study also reveals that *extrinsic motivation* has no influence on *perceived usefulness* as well as *confirmation*, which is contradictory to the findings of (Deci, 1975) and (Deci & Ryan, 1985). The reason for disagreement with the earlier studies in terms of the role played by extrinsic motivation could be many. First of all, the earlier studies have been in a different context of human behaviour. Human behaviour often changes with the context, for instance the behaviours exhibited towards automobile technology and mobile technology may be totally different. Perceived usefulness could be quite positive in one and negative in the other despite the fact that both are some form of technology. So, in the context of E-learning, it has been revealed that extrinsic motivation has failed to produce significant positive relationship with the perceived usefulness as well as conformation. There could also be other differences such as place and time of study as the human behaviour in terms of perceived usefulness could be vary based on the geographical location, local customs, ethics, beliefs, culture, religion, norms and so on. However, the observation through this study is that in the context of e-learning, external motivators such as monetary gains, rewards, recognition, fame etc., may not influence the perceptions of the students about perceived usefulness and confirmation.



**Figure 2**

*Path Model*



**Figure 3**

*Structural Model (t-values)*



**Table 6***t-values of the Dimensions*

|                 | Path<br>Coeff. | Sample<br>Mean | Stan-<br>dard<br>Devia-<br>tion | Stan-<br>dard<br>Error | t-Value | Result        |
|-----------------|----------------|----------------|---------------------------------|------------------------|---------|---------------|
| EXM -> PRU (H1) | -0.02          | 0.00           | 0.10                            | 0.10                   | 0.21    | Not Supported |
| INM -> PRU (H2) | 0.34           | 0.32           | 0.12                            | 0.12                   | 2.90*   | Supported     |
| EXM -> CNF (H3) | -0.04          | -0.06          | 0.09                            | 0.09                   | 0.41    | Not Supported |
| INM -> CNF (H4) | 0.63           | 0.64           | 0.06                            | 0.06                   | 10.47*  | Supported     |
| CNF -> PRU (H5) | 0.47           | 0.49           | 0.11                            | 0.11                   | 4.44*   | Supported     |
| PRU -> SAT (H6) | 0.35           | 0.35           | 0.10                            | 0.10                   | 3.44*   | Supported     |
| CNF -> SAT (H7) | 0.48           | 0.48           | 0.09                            | 0.09                   | 5.15*   | Supported     |

\*Significant at 1% Alpha Level

## Discussion and Implications

The cardinal objective of this research was to investigate the influence of *extrinsic* and *intrinsic* motivation on *satisfaction* in e-learning with the *perceived usefulness* and *confirmation* as the intermediate variables. The observations based on the outcome of this research and the corresponding implications to the policy makers in e-learning are cited.

## Theoretical Implications

Theoretical contribution of this research is mainly on the enhancement of *satisfaction* in e-learning of the students based on Expectation Confirmation Theory (ECT) in higher educational contexts, specifically in the context of Arab nations, where there are very few empirical generalizations to this theory. This study provides empirical evidence to the ECT infused with two new antecedents: *extrinsic motivation* and *intrinsic motivation* which are ignored in many of the earlier studies despite the role they play on satisfaction. The research shows that these

two are pertinent and relevant antecedents of ECT in predicting satisfaction. This study offers additional support for the applicability of ECT in predicting satisfaction in e-learning.

The study has provided further empirical evidence for the earlier findings relating the research constructs: *confirmation*, *perceived usefulness* and *satisfaction*, and also disputed the relationship of *extrinsic motivation* with *perceived usefulness* and *confirmation*. The reasons for variation in the findings with respect to the earlier studies are also presented. Future researchers may incorporate perceived ease of use, perceived risk, continuance intention, and actual use to the module developed in this research to take research to greater heights. It is worth mentioning that *intrinsic motivation* of the students emerged out to be the most important predictor of *satisfaction*, because it had positive relationship with *perceived usefulness* and *confirmation* both of which were positively related to *satisfaction*. As this relationship was not established in the context of E-learning in higher education, such theoretical finding could also provide base for practical implications.

## Practical Implications

The research supports the relationship between *intrinsic motivation* and *perceived usefulness* (H2). This indicates that students who join e-learning through intrinsic motivation are going to perceive higher usefulness of the E-learning. This makes a very important implication to the promoters of E-learning in Kuwait that if they can promote the intrinsic motivation of students their perceptions about the usefulness will increase. First of all, the promoters of e-learning in Kuwait, mainly the Ministry of Education should benchmark the e-learning system with the best practices of the successful models. Higher level of technology assistance, ease of technology usage, simplicity of course content, richness of visuals through animation and sound, smooth flow of the content, exercises for better comprehension and retention, application oriented content delivery are some of the time tested features of E-learning which may make students intrinsically motivated to learn through E-learning mode. These features must be communicated to the students beforehand so that they may come forward to enroll in the

course. Higher emphasis on self-directed approach towards learning may be of great help to strengthen the intrinsic motivation of the students.

It is worthwhile to consider the first principles of motivation towards e-learning by Keller (2008); according to which, importance may be given to 'arouse student's curiosity'. If students' curiosity can be stimulated, automatically they will be engaged in learning and they will pay full attention to the course content. The same approach may not be successful in all the cases, so a variety of curiosity arousing tools may have to be used in the course content based on the context of study which may include matching the content with the professional interest of the learner, current need of the learner, aspects of subject not covered elsewhere, relating to the personal experience etc.

Results indicated that students' *intrinsic motivation* also leads to *confirmation* (H4) that the e-learning meets their expectations in the course of studies. It is natural that when the students are intrinsically motivated towards studies and technology aids their efforts in understanding what they intend to learn, confirmation should occur automatically for the simple fact that it acts as a tool to enhance learning. Additional care from the promoters of e-learning in the form of feedback mechanism can reaffirm confirmation. Implication to the promoters of e-learning is that the digital content of e-learning must be such that the students should feel that their attitude towards learning has turned out to be positive, their grades improve continuously, they gain 'mastery' over the topics of their interest, they are able to apply what they learn, they can comprehend and retain what they have learned for a long duration and ultimately the system transforms them to lifelong learners. The approach of e-learning should be to make the students develop intrinsic motivation so that they look forward to the next session of e-learning when they complete a session.

It was clear through this research that *confirmation* can lead to *perceived usefulness* of e-learning (H5). Implications to the managers of e-learning is that efforts should be made to make the students realize the importance of using the technology to enhance their learning. In fact, it is very easy to make the students realize the importance of e-learning, as it can provide flexibility in learning in terms of 'space' and 'time'. Students can be easily convinced about the ability to learn from

a place of their desire and at the time which suits their schedule. This feature may be of specific importance to the working class of students. In the today's smart phones driven world, e-learning can be facilitated through applications in the smartphones. Importance of e-learning can be realized even through sustainability principle of environmental protection. There are studies which have proved that Carbon Dioxide emission can be brought down by at least 15% through e-learning as the students need not travel to the campuses on daily basis as in a conventional classroom based learning, the usage of books on printed form can be brought down substantially, and huge campuses may not be required to run universities (Gosavi, Thakare & Wadhai, 2014). Promoters of e-learning may highlight its importance even in terms of affordability. Due to the economies of scale, e-learning can be made highly affordable to the students.

As identified through this research, *perceived usefulness* of e-learning has a significant positive relationship with *satisfaction*. This revelation has a significant implication to the policy makers of e-learning education who are primarily the Ministry of Education in Kuwait. Students will be satisfied with their e-learning outcomes if their perceptions regarding the usefulness of the technology are positive. In other words, if e-learning resources are not found to be useful in studying the courses, it could lead to students' dissatisfaction. Thus, for effective use of e-learning there has to be measures to demonstrate the usefulness of e-learning. One of the worthwhile considerations would be to focus on the augmentation of the support systems of e-learning as it is a means to strengthen perceived usefulness (Cheng et al., 2011). For instance, a superior user-interface design (Liu et al., 2010) can build the confidence among the students that the technology can be made use of effectively for learning how things work. Making students develop affinity towards the usage of e-learning tools could be another method to strengthen perceived usefulness as found by Ifinedo (2018). Similarly, other possibilities may be tried by the propagators of e-learning to make the students develop better perceived usefulness.

*Confirmation* is found to have significant positive relationship with *satisfaction* in learning through e-learning. The implication of this finding is that unless the students' expectations about the performance of e-learning technology are met, they may not be satisfied with it.

Learning context (Terzis, Moridis & Economides, 2013) is identified to be one of the factors which can provide confirmation in e-learning. So, if the providers of e-learning can build a strong foundation to the learning context, and accordingly develop the content, it can significantly contribute to the students' confirmation leading to satisfaction. The four components of e-learning: information quality, system quality, support-system quality, and instructor quality decide whether the e-learning meets the expectations of the student and cause confirmation or disconfirmation. So, the propagators of e-learning system must ensure that the information available in the e-learning system portal is the latest and must be made easily accessible to the students as and when they need it. It is suggested that policy makers should consider the compatibility between system features and students' requirements and accordingly develop interactive mechanisms to timely respond to the learning needs to enhance their acceptance of the e-learning system. The reliability of the content must be very high so as to make the student feel that he/she can access it as per their convenience. There should be a robust support systems available to the students which provides adequate control over learning so that learning can take place at one's individual pace of learning. The speed of access of learning content must be to the expectation of the students. Consistency and reliability of the learning material available in the e-learning system must be in accordance with the specific requirements of the students. Support services from the help-desk should be timely and reliable. The service administrators of the support services must be friendly and know the needs of the student community. Finally, the instructor quality should be very high and they should be easily accessible, provide the necessary support to learning, and be very good facilitators to learning and encourage learner-centric-learning all the time. These aspects would provide confirmation on e-learning to the students.

## Conclusion

Based on the ECT, this research identified two additional dimensions and applied the modified model in the context of e-learning environment in higher education in Kuwait. The study revealed that while intrinsic motivation of the students had the potential to lead to their satisfaction in e-learning, extrinsic motivation failed to provide

satisfaction with perceived usefulness and confirmation as the intermediate variables in both the cases. So, the obvious implication to the propagators of e-learning in higher education confirms that the e-learning environment should incorporate systems, processes and practices that intrinsically motivate the students towards e-learning.

The study has some limitations to be considered before the generalization of the results. The sample size is limited to 212 and is based on random sampling it is quite adequate for the given population. However, the issue is in terms of randomization. Randomization is ensured by selecting sample based on random numbers, but the response rate was an issue and there was a need to collect additional samples based on contacts and this may affect the data quality adversely. However, the reliability and validity measures through the SEM confirm that the indices of reliability and validity are adequate. Any perception-based study is dependent on the truthfulness of respondents and this may affect the study results to some extent. Finally, SEM as a tool is based on partial least square method which has its own limitations. SEM cannot study the interaction effects between variables and this is also a limitation of this study. For instance, perceived usefulness and conformation may interact with each other and have an influence on satisfaction which is not considered in this research. Despite these limitations, the study has made some important revelations and provided suggestions which can be used by the propagators of e-learning in higher education in Kuwait.

## دور التحفيز الداخلي والخارجي للرضا عن التعلم الإلكتروني في دولة الكويت: بحث تجريبي

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### ملخص

يركز هذا البحث على الدور الذي يقوم به كل من الدافع الداخلي والخارجي على الرضا الملحوظ للطلاب في التعليم العالي من خلال التعلم الإلكتروني مع الفائدة المتصورة والتأكيد؛ كمتغيرات وسيطة. اعتمد البحث على النموذج الوضعي واعتمد المنهج التجريبي للبحث لاختبار سبع فرضيات باستخدام تقنية النمذجة الهيكلية باستخدام عينة (ن=212) بناءً على أخذ عينات عشوائية بسيطة. كان المشاركون من طلاب الدراسات العليا في تكنولوجيا التعليم في معهد يخضع للحكومة العامة في الكويت. أشار اختبار الفرضية إلى أن الدافع الداخلي للطلاب فقط هو الذي يمكن أن يؤثر بشكل كبير على التأكيد وكذلك الفائدة المتصورة ويوفر الرضا في التعلم الإلكتروني. كان التضمين النظري هو اقتراح بُعدين إضافيين لنظرية تأكيد التوقع والآثار العملية في شكل اقتراحات لأصحاب المصلحة في التعلم الإلكتروني في الكويت لجعل التعلم الإلكتروني مُرضيًا للطلاب.

الكلمات المفتاحية: نظرية تأكيد التوقع، التحفيز الخارجي، الدوافع الذاتية، إفادة مدركة؛ تكنولوجيا التعليم.

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