An Investigation of the Motivational Factors Influencing Learners' Intentions to Continue Using Arabic MOOCs

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Abstract

Massive open online courses (MOOCs) have evolved rapidly in recent years. Understanding the factors affecting the retention of existing learners in MOOC platforms and prompting their continued engagement is crucial to the success of such platforms. However, the factors that affect the technology acceptance by users may vary across cultures in terms of their significance and predictive power. This study aims to fill this gap by examining the factors affecting learners' intentions to continue using MOOCs. Factors were examined through the lens of Arabic MOOCs and the technology acceptance model (TAM), integrating the model with a range of additional factors: technological, organisational, individual-related, social, and cultural. Exploratory and explanatory mixed methods approaches were adopted using qualitative and quantitative methods (Semi-structured interviews and self-administered online questionnaire). The results provided evidence of the successful extension of the TAM. In light of the findings of this study, recommendations were put forward to MOOC developers and instructors to adopt design strategies which could increase learner loyalty for Arabic MOOCs' use.

Keywords: Learner's Motivations, MOOC Acceptance, MOOC Adoption, MOOC Retention, MOOCs.

Introduction

Information and communication technologies (ICT) have become an integral part of teaching in the educational institutions, significantly contributing to their success and effectiveness. MOOC platforms are an innovation in open and distance education that has gained popularity in the recent years with a number of MOOCs providers and learners growing since their appearance in 2008 (Mulik, Yajnik & Godse, 2016; Shah, 2016; Ouyang, Tang, Rong, Zhang, Yin & Xiong, 2017). MOOCs afford large-scale and open educational platforms where teachers and learners across the world can interact, and the learning process is flexible and free of charge. Unlike institutions restricted by the traditional educational systems, a single course in MOOCs can gather learners of different backgrounds, specializations, cultures, ages, motivations, learning habits, goals, and skills. Based on its myriad of advantages, certain researchers see MOOCs as a complement to the traditional education (de Langen & van den Bosch, 2013; Clark, Vealé & Watts, 2017).

Similar to any technology used to enhance learning, MOOCs cannot be maximised or considered successful unless they are accepted and used by their target users (Pituch & Lee, 2006; Lai, Wang & Lei, 2012; Tarhini, Hone & Liu, 2014). More importantly, the success, long-term viability, and sustainability of information systems are associated with post acceptance (continued use) rather than initial acceptance (first-time use) (Bhattacherjee, 2001; Lin, Featherman & Sarker, 2017). In MOOCs, there is a diversity in motivations and intents among learners to sign up for such courses (Bayeck, 2016; Milligan & Littlejohn, 2017). The different motivations result in learners handling the courses differently (Alario-Hoyos, Estévez-Ayres, Pérez-Sanagustín, Kloos & Fernández-Panadero, 2017). This diversity poses challenges and obstacles to MOOC providers in terms of designing effective courses that would be suitable for all participants (Che, Luo, Wang & Meinel, 2016). Also, the low completion rates of MOOCs raise a question: if completion of courses is not a motivation for learners to participate in MOOCs, what are their motivations?.

Studies examining the acceptance and continuance of technology-enhanced learning, e.g. mobile learning and e-learning, in different contexts are well-documented in the literature. However, MOOCs need further studies because they have their own characteristics that distinguish them from the other online educational delivery models such as scalability, openness, and heterogeneity of learners. The current research found numerous studies devoted to MOOCs acceptance and the continuance use intention. Nevertheless, nearly all these studies have been validated in non-Arabic cultures, mostly in China, where values and behaviours differ significantly from the Arabic culture.

Regarding the technology acceptance, various studies concluded that the national cultures of the technologies users manifested diverse impacts on their acceptance behaviour with varying degrees of intensity or importance (Bandyopadhyay & Fraccastoro, 2007; Im, Hong & Kang, 2011; Kaba & Osei-Bryson, 2013; Lu, Yu, Liu & Wei, 2017). With respect to MOOCs, for example, Davis, Dickens, Leon, Sánchez-Vera & White (2014) found that learners' reasons to participate in MOOCs can vary significantly across cultures. Furthermore, from the prior studies on MOOCs acceptance/continuance that had been carried out across diverse cultures, it was obvious that both the significance and the predicting power of certain variables were different.

The Arabic culture possesses its own language, cultural and religious values as well as educational policies that vary substantially from the other cultures. There are nineteen Arabic speaking countries in the world and the Arabic language is the sixth most spoken language in the world with 420 million speakers (Ridout, n.d) and used by 1.5 billion Muslims (UNESCO, n.d.). The development, popularity, and growth of Arabic MOOCs are still in their initial stages (Adham & Lundqvist, 2015). Accordingly, examining the beliefs of learners towards using Arabic MOOCs can contribute to the growth and proliferation of these platforms. Mutawa (2016) reported the need to design localised version of MOOC platforms for the Gulf region. This work aims to address a number of gaps in the existing literature. The choice of the Arabic MOOCs in this study is driven by the lack of research investigating the factors impacting the individuals' motivations towards the continuation of the Arabic MOOCs usage.

- **Research Questions**

Owing to the importance of understanding the willingness to continue using technologies, the main purpose of this research is developing and testing a theoretical model that identifies the determinants predicting the learners' continuance intention towards using Arabic MOOCs exemplified by the Rwaq platform. Consequently, this research seeks to answer the following questions:

RQ1: What is the suitable technology acceptance/continuance model that can be used as a theoretical foundation to investigate the learners' continuance intention towards using Arabic MOOCs?
RQ2: What are the potential motivational factors affect learners' decisions to continue using Arabic MOOCs?

RQ3: What are the potential relationships between the motivational factors which affect learners' intentions to continue using Arabic MOOCs?

RQ4: What factors have significant effects on MOOCs' continuance intention?

RQ5: What factors have the strongest effect on MOOCs' continuance intention?

RQ6: To what extent do the motivational factors of participants in Arabic MOOCs differ or concur with the reported motivations in the studies that have been carried out in different cultural contexts?

RQ7: How well does the proposed model explain the continuance intention towards using Arabic MOOCs?

- **Significance and contributions of this study**

The present study is vitally important for theoretical and practical reasons. As far as the theoretical aspects are concerned, the present study is one of the first investigations that set out to better understand the variables that are indicative of learners' persistence in using Arabic MOOCs. This research provides important contributions to a pool of literature on technology continuance theories. The theoretical contributions of this study are as follows:

- This study is one of the first studies that strives to build a model in a new context: learners' views on continuing to use Arabic MOOCs. The goal of this research is increasing the explanatory power of TAM, taking into consideration culture-related, individual-related, society-related, organisation-related, and technology-related influences.

  - Providing a critical analysis of previous studies related to the MOOCs acceptance/continuance in order to identify their limitations and current gaps in the literature.
  - Adding new variables that have not been examined before in MOOCs acceptance/continuance to fit the context of MOOCs in Arabic settings. The new variables include the Arabic language support, willingness to earn a certificate, and free courses' advantages.
  - Adopting mixed methods approach (qualitative and quantitative data collection methods) in order to increase the validity of this research.
  - Using the interviews to explore the opinions of experts familiar with Arabic MOOCs regarding the proposed factors that affect the continuance intention.
  - Testing and validating the extended TAM empirically. The model developed in this study can be tested by researchers in the field of MOOCs continuance in different contexts.
  - The quantitative study is based on relatively large sample size (n=884).

- Developing and validating questionnaire's measurement items, many of which have been self-developed to suit this research context.
  - Intending to capture the influence of different dimensions of the construct by designing the majority of the constructs in this study as formative ones.
  - Contributing to the existing body of studies in information systems that use the Structural Equation Modelling technique by adopting partial least squares structural equation modelling (PLS-SEM) using Warp-PLS software for analysing the data. This software, which considers the non-linearity nature of the variables, allows to gain a complete picture about the phenomena under study.

- Shedding insight into the similarities and differences between the Arabic and non-Arabic cultures in terms of the factors affecting the use of MOOCs.

Thus, it is expected that this research will serve as a useful guide for future studies on MOOCs continuance, particularly for empowering open online learning in the Arabic region. In practical terms, the results of this research offer valuable recommendations for the developers of Arabic MOOC platforms as well as the instructors who teach courses in such platforms to drive the development of the Arabic platforms through the following:

- Improved understanding of learners' participation in the Arabic MOOCs.
- Comprehending the culture-related factors in order to:
    - (a) design a localised version of the platform; (b) tailor effective and culturally appropriate courses to enhance learners' satisfaction.

- **Context of this study: Arabic MOOCs**

Compared to the developed countries, the advancement and movement of open educational resources (OER) initiative in the Arabic world are still in their infancy, particularly the Arabic content repositories (Adham & Lundqvist, 2015; Jemni & Khribi, 2017; Sallam, 2017). Because there is no explicit vision or policy for the development of OER in the Arabic countries, most of the ventures in this area failed and did not continue (Jemni & Khribi, 2017). There are limited number of popular platforms in the Arabic region, for instance Rwaq[1] and Edraak[2] are considered the most famous Arabic platforms (Mutawa, 2016; Sallam, 2017). Compared to the well-known platforms like Coursera and edX that have millions of registered users and thousands of courses, in 2017, it was reported that the numbers of registered users in Rwaq and Edraak are about 700,000 and 1,000,000, respectively with only hundreds of courses in such platforms. In the Arabic countries, different factors such as digital infrastructure, technologies such as PCs and smartphones, Internet diffusion, and connection costs affect the development of MOOCs (Sallam, 2017). For example, the uneven Internet usage is reflected in more than 90% and less than 10% of population using the Internet in the Arabic gulf countries and other Arabic countries like Somalia and Comoros, respectively (Sallam, 2017). More importantly, millions of children in the Arabic region are illiterate for reasons such as civil wars, crises, or starvation (Jemni & Khribi, 2017).

The Arab League Educational, Cultural, and Scientific Organization (ALECSO)[3], which is headquartered in Tunis and consists of 22 Arab countries, is interested in creating and coordinating projects for the development of education, culture, and science in the Arabic region. ALECSO aims to become involved in the international wave of education through promoting open and online learning and increasing the accessibility of education via using ICT. To attain its goals, it has proposed a smart learning framework based on three key dimensions, namely open learning, mobile technology, and cloud computing (Jemni & Khribi, 2017). Regarding the open learning dimension, ALECSO has realized the importance of providing Arabic MOOCs, and hence created ALECSO MOOCs' Project (Jemni & Khribi, 2017) whose goals are the following:

1. Proposing a platform for delivering Arabic MOOCs.
2. Developing a prototype for Arabic platforms.
3. Running the developed prototype and assessing its effectiveness.

As stated by Mutawa (2016), Rwaq has the highest number of visitors in the Arabic world. We selected Rwaq as the platform for the investigation in this study. Two Saudi citizens named Fouad Al Farhan and Sami Al Hussayen launched Rwaq in September 2013 (Rwaq.org, 2017). Rwaq offers courses solely in the Arabic language. In Rwaq, the courses were provided free of charge until mid-2018, when some courses were offered at a nominal fee. As cited by the CEO of the Rwaq platform, in September 2017, the number of registered users in this platform reached about 738,371 from 184 countries. Most of the users of the Rwaq platform come from Saudi Arabia (40%).

The structure of the rest of this paper as follows: section two provides basic background about MOOCs and technology continuance theories followed by the related works in the field of MOOCs acceptance and continuance intention. The proposed research model and hypotheses are presented in section three. Section

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[1] https://www.rwaq.org

[2] https://www.edraak.org/en/

[3] https://www.alecso.org/en/

four illustrates the methodology adopted in this research to empirically validate the proposed model. Section five is dedicated to the qualitative findings followed by the quantitative results and the discussion. The conclusion is shown in section six, which addresses the summary of this research and the implication of the findings.

Literature Review

The concept of MOOCs was created from open educational resources (OER) and open courseware (OCW) (Atiaja & Proenza, 2016). OER is defined as "digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research" (OECD, 2007, p.30). MOOCs and OCW share many characteristics. The initiative of OCW, which is "a free and open digital publication of high-quality educational materials, organised as courses" (OECD, 2007, p.43), was started in 2001 in the Massachusetts Institute of Technology (MIT) (Atkins, Brown & Hammond, 2007).

Presently, numerous universities offer open resources for their courses which are available to the people around the globe. On the other hand, MOOCs are defined as "online courses designed for large numbers of participants, that can be accessed by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free" (Jansen & Schuwer, 2015, p.4).

Technology acceptance theories illuminate the determinants that predict the initial acceptance (first-time use) of technologies. In contrast, technology continuance theories centred on the individuals' decision to continue or discontinue using the technologies having used and experienced them (post-adoption). Although technology acceptance and continuance follow similar theoretical trajectory, they are different in that the continuance phenomenon occurs after the first time use only (initial acceptance) (Bhattacherjee & Lin, 2015).

The theories related to technology continuance are few compared to the theories of technology acceptance that include the innovation diffusion theory, the technology acceptance model (TAM), the theory of planned behaviour (TPB), and the unified theory of technology adoption and use (UTAUT) (Bhattacherjee & Lin, 2015). The following are the most commonly used theories in research on information technology continuance intention (Nabavi,Taghavi-Fard, Hanafizadeh & Taghva, 2016):

1. Information System Continuance Model (ISCM).
2. Theory of Reasoned Action (TRA).
3. Theory of Planned Behaviour (TPB).
4. Technology Acceptance Model (TAM).
5. Unified Theory of Acceptance and Use of Technology (UTAUT).
6. IS Success Model.

In recent years, the problem of MOOCs acceptance and continuance intention has gained considerable attention due to the growth of MOOCs popularity with the emergence of numerous MOOCs providers and the increase in the number of their users. The objective of this section is presenting pervious works that have investigated MOOCs continuance use intention.

Table 1 summarizes geographic distribution of participants, used theories, sample size, type of respondents, data collection, and data analysis methods used in the previous MOOCs articles. In addition, the key results reported by such articles are demonstrated in Table 2.

Table 1:Review of MOOCs acceptance and continuance studies.

Author(s) (Year)	Geographic distribution of respondents	Used theory	Sample size & type of respondents	Data collection method	Data analysis method
Huanhuan & Xu (2015)	China	TAM	171 participants	Questionnaire	Covariance-Based Structural equation modelling (CB-SEM) using AMOS
Alraimi, Zo & Ciganek (2015)	Respondents originated from 74 countries (24% from USA, 14% from India, 10% from Greece and Azerbaijan, and 42% from other countries)	Expectation Confirmation Model (ECM)	316 users of Coursera, edX, and Udacity. Sample of students, employees, and others	Online questionnaire	Partial least squares Structural equation modelling (PLS- SEM) using SmartPLS
Zhou (2016)	China	• TPB • Self Determination Theory (SDT)	400 university students	Online questionnaire	CB-SEM using AMOS
Sa, Lee, Kang, Gim & Kim (2016)	Korea	TAM	309 participants	Questionnaire	CB-SEM using AMOS
Wu & Chen (2017)	China	• TAM • Task Technology Fit (TTF)	252 (170 were students, 58 were employees, and 14 were others)	Online Questionnaire	PLS-SEM
Yang, Shao, Liu & Liu (2017)	China	• IS success model • TAM	294 respondents with e-learning experience in icourse.com	Online Questionnaire	PLS-SEM using SmartPLS
Joo, So& Kim (2018)	Not available	• TAM • Self-Determination Theory	166 university students who took a K-MOOC course delivered by Korean university	Questionnaire	CB-SEM using AMOS
Tsai, Lin, Hong & Tai (2018)	Respondents originated from 5 countries (75.40% from Taiwan, 10.32% from China, 7.14% from Japan, 4.76% from Brazil, and 2.38% from Korea)	Metacognition	126 participants	Questionnaire	CB-SEM using AMOS

Table 2: Key results of previous studies on MOOCs acceptance and continuance.

Author(s) (Year)	Key results
Huanhuan & Xu (2015)	**Supported hypotheses:** • The positive effect of the perceived reputation on the willingness to use social network. • The positive effect of the perceived reputation on the perceived usefulness. • The positive effect of the willingness to use social network on perceived ease of use and interactivity. • The negative effect of the perceived usefulness on the perceived cost. • The positive effect of the perceived usefulness and perceived ease of use and interactivity on the intention to adopt MOOCs. **Unsupported hypotheses:**

	• The positive effect of the willingness to use social network on perceived cost.
	• The positive effect of the willingness to use social network and perceived reputation on the intention to adopt MOOCs.
	• The negative effect of perceived cost on the intention to adopt MOOCs
Alraimi, Zo & Ciganek (2015)	**Supported hypotheses:**
	• The positive effect of confirmation on perceived openness and perceived reputation.
	• The positive effect of perceived openness and confirmation on perceived usefulness.
	• The positive effect of confirmation, perceived reputation, and perceived enjoyment on satisfaction.
	• The positive effect of perceived openness, confirmation, and perceived reputation on perceived enjoyment.
	• The positive effect of perceived openness, perceived usefulness, satisfaction, perceived enjoyment, and perceived reputation on the continuance intention to use MOOCs.
	Unsupported hypotheses:
	• The positive effect of perceived usefulness and perceived openness on satisfaction.
Zhou (2016)	**Supported hypotheses**:
	• The positive effect of autonomous motivation on attitude and perceived behavioural control.
	• The negative effect of controlled motivation on perceived behavioural control.
	• The positive effect of controlled motivation on the subjective norm.
	• The positive effect of the attitude and perceived behavioural control on the intention to continue using MOOCs.
	Unsupported hypotheses:
	• The positive effect of the subjective norm on the intention to continue using MOOCs.
	• The negative effect of controlled motivation on the attitude.
	• The negative effect of autonomous motivation on the subjective norm.
Sa, Lee, Kang, Gim & Kim (2016)	**Supported hypotheses:**
	• The positive effect of popularity, ubiquity, reputation, and information richness on the perceived ease of use.
	• The positive effect of popularity, interactivity, reputation, information richness, and the perceived ease of use on the perceived usefulness.
	• The positive effect of the perceived ease of use and perceived usefulness on the usage intention.
	Unsupported hypotheses:
	• The positive effect of openness and interactivity on the perceived ease of use.
	• The positive effect of openness and ubiquity on perceived usefulness.
Wu & Chen (2017)	**Supported hypotheses:**
	• The positive effect of task technology fit, reputation, social recognition, social influence, and the perceived ease of use on the perceived usefulness.
	• The positive effect of individual technology fit, task technology fit, and openness on the perceived ease of use.
	• The positive effect of the perceived usefulness on the attitude.
	• The positive effect of the perceived usefulness and attitude on the continuance intention to use MOOCs.
	Unsupported hypotheses:
	• The positive effect of individual technology fit and openness on perceived usefulness.
	• The positive effect of social influence and the perceived ease of use on the attitude.
Yang, Shao, Liu & Liu (2017)	**Supported hypotheses:**
	• The positive effect of system quality on the perceived ease of use and the continuance intention to use MOOCs.
	• The positive effect of course quality and service quality on the perceived usefulness of MOOCs.
	• The positive effect of the perceived usefulness on the continuance intention to use MOOCs.
Joo, So & Kim (2018)	**Supported hypotheses:**
	• The positive effect of the perceived usefulness and perceived ease of use on satisfaction.
	• The positive effect of the perceived ease of use on perceived usefulness.
	• The positive effect of satisfaction on continuance intention
	Unsupported hypotheses:
	• The positive effect of self-determination on satisfaction.
Tsai, Lin, Hong & Tai (2018)	**Supported hypotheses:**
	• The positive effect of metacognition on liking.
	• The positive effect of metacognition on enjoyment.

- The positive effect of metacognition on engagement.
- The positive effect of liking on the continuance intention to use MOOCs.
- The positive effect of enjoyment on the continuance intention to use MOOCs.
- The positive effect of engagement on the continuance intention to use MOOCs.

Proposed Research Model and Hypotheses

In light of the extensive literature review, we identified the variables which may contribute to understanding the participation in Arabic MOOCs. Numerous models and variables have been proposed and examined in the previous studies pertaining to the MOOCs acceptance/continuance. Amongst technology acceptance theories, TAM is one of the most influential and frequently adopted theories for individual's acceptance of information systems (Wangpipatwong, Chutimaskul & Papasratorn, 2008). In the report of Nabavi,Taghavi-Fard, Hanafizadeh & Taghva (2016), TAM is the most widely used theory after ISCM in IS continuance literature. In addition, it is the most frequently used model in the previous studies related to the acceptance of technology enhanced learning (Abdullah & Ward, 2016). The current study discovered that TAM has emerged as the most frequently adopted model in the MOOCs acceptance/continuance research, for instance Gao & Yang (2015); Huanhuan & Xu (2015); Mulik, Yajnik & Godse (2016); Wu & Chen (2017). The reason lies in its simplicity (parsimony), which suggests that the behavioural intention to use a system is a function of only two variables: perceived usefulness and perceived ease of use. Moreover, the TAM has been found robust when applied in diverse settings and samples (Wu, 2012). Accordingly, perceived usefulness and perceived ease of use, the main variables of the TAM, were selected to be included in the model developed in this study. Although the TAM primarily targets predicting the acceptance of new technologies in the initial introduction phase, it has been revealed that it is valid for explaining the experienced user's continuance intention (Yang, Shao, Liu & Liu, 2017). Nevertheless, researchers recommend extending TAM with other variables in order to provide a stronger model for new research contexts and settings (Wangpipatwong, Chutimaskul & Papasratorn, 2008; Wu & Chen, 2017). Given these findings, additional variables were integrated into the model in order to better understand and explain the Arabic MOOCs continuance intention from the learners' perspective. Figure 1 presents the proposed research model.
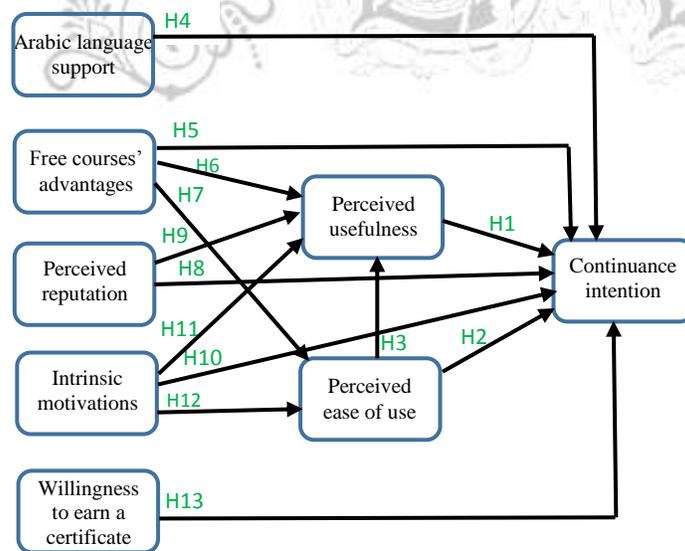

Figure 1: The proposed research model

- **Effect of Perceived Usefulness (PU) on Continuance Intention (CI)**

Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his/her job performance" (Davis, 1989, p.320). Numerous studies found that PU has a significant, positive correlation with the behavioural intention to use or continue to use MOOCs, for example Alraimi, Zo & Ciganek (2015); Chu, Ma, Feng & Lai (2015); Huanhuan & Xu (2015); Mulik, Yajnik & Godse (2016). In the current study, the perceived usefulness is defined as the ability of MOOCs to assist people in learning and expanding their knowledge or skills effectively. Therefore, in accordance with the previous results, it is hypothesized as follows:

H1. Perceived usefulness will have a significant, positive effect on the continuance intention to use MOOCs.

- **Effect of Perceived Ease of Use (PEU) on Continuance Intention (CI)**

Davis (1989, p.320) defined perceived ease of use as "the degree to which a person believes that using a particular system would be free of efforts". The research on MOOCs acceptance and continuance validated the significant, positive effect of PEU on the behavioural intention to use or continue to use MOOCs, for example Gao & Yang (2015); Huanhuan & Xu (2015); Zhang, Yin, Luo & Yan (2017). Regarding the persistence in the platforms, the ease of use factor is valuable particularly because the development of any information technology is subject to improvements. Therefore, the providers and designers of the platforms should take into account the ease of use factor when performing the enhancements on the platform. Consequently, the following hypotheses have been formulated based on the prior literature:

H2. The perceived ease of use will have a significant, positive effect on the continuance intention to use MOOCs.
H3. The perceived ease of use will have a significant, positive effect on the perceived usefulness.

- **Effect of Arabic Language Support (ALS) on Continuance Intention (CI)**

The majority of courses in MOOCs are offered in English (7,752) while only 128 are provided in the Arabic language (Class Central, 2018). Rwaq is an Arabic MOOC platform that provides courses exclusively in the Arabic language. Sanchez-Gordon & Luján-Mora (2014) stated that international learners who attend MOOCs offered in a language different than their native language might face difficulty pertaining to language issues depending on their level of skill in the language. Most of the individuals in the Arabic world do not have the English language skills needed to participate in English MOOCs (Adham & Lundqvist, 2015). In 2016, a report released by the EF English Proficiency Index revealed that the Middle East and North Africa populations had the lowest English proficiency among 72 international countries studied (ICEF Monitor, 2016). A number of researchers are of the opinion that there is a need for MOOCs localization for the reason that learners understand the contents better and communicate faster when engaging in MOOCs offered in their mother tongue (Pang, Wang & Wang, 2014). The effects of the language of MOOCs have not been investigated previously in the context of MOOCs acceptance and continuance. This study is the first effort that supposes that learners are likely to develop a positive intention towards the persistence in MOOCs if the courses are provided in their mother tongue, Arabic. As such, the following hypothesis was developed for this research:

H4. Arabic language support will have a significant, positive effect on the continuance intention to use MOOCs.

- **Effect of Free Courses' Advantages (FCA) On Continuance Intention (CI)**

Openness is one of the main features of MOOCs that allows a massive number of learners to access the educational resources freely and flexibly. Few studies have explored the significant, positive effect of MOOCs' openness on the behavioural intention to continue using MOOCs, for instance Alraimi, Zo & Ciganek (2015); Wu & Chen (2017). Mohapatra & Mohanty (2016) found a significant, positive influence of affordability on the behavioural intention to use MOOCs. Similarly, Davis, Dickens, Leon, Sánchez-Vera & White (2014) and Shrader, Wu, Owens-Nicholson & Santa Ana (2016) have discovered that the openness of MOOCs is a reason which encourages people to join MOOCs. Adham & Lundqvist (2015) stated that students in Middle Eastern countries such as Saudi Arabia, UAE, and Egypt spend money on private tutoring services in order to understand subjects they take in universities. Hence, participating in the free of charge MOOCs related to their curriculums can help them to save money. This study is the first attempt that focuses on considering the advantages of free of charge courses as an interesting factor for learners to continue using MOOCs. Based on the previous findings, this research proposes the following hypotheses:

H5. Free courses' advantages will have a significant, positive effect on the continuance intention to use MOOCs.
H6. Free courses' advantages will have a significant, positive effect on the perceived usefulness.
H7. Free courses' advantages will have a significant, positive effect on the perceived ease of use.

- **Effect of Perceived Reputation (PR) On Continuance Intention (CI)**

An organisation's reputation has been defined by Feldman, Bahamonde & Velasquez Bellido (2014, p.54) as "a reflection of how it is regarded by its multiple stakeholders. Its reputational stance can help the organization obtain trust and credibility in society, which will assist in the achievement of its objectives and goals". A few researchers have found a significant, positive impact of perceived reputation of MOOCs on the behavioural intention to use or continue to use MOOCs such as Alraimi, Zo & Ciganek, (2015); Mohapatra & Mohanty (2016). Likewise, Yang, Shao, Liu & Liu (2017) revealed a significant, positive relationship between the system, course, service quality and learners' continuance intention. In light of the prior findings, the present study suggests further hypotheses:
H8. The perceived reputation of MOOCs will have a significant, positive effect on the continuance intention to use MOOCs.
H9. The perceived reputation of MOOCs will have a significant, positive effect on the perceived usefulness.

- **Effect of Intrinsic Motivations (IM) on Continuance Intention (CI)**

According to Ryan & Deci (2000, p.55), "the most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome". Enjoyment, interest, curiosity, and challenge are the main types of intrinsic motivations. In this research, the operational definition of intrinsic motivations is using Rwaq for learning for reasons such as enjoying the activity itself, curiosity to explore interesting topics, or interest in using Rwaq for learning. Several items of literature have shown evidence that the intrinsic motivations, like perceived enjoyment, curiosity, interest, or perceived playfulness, have a significant impact on learners' intention to use or persist in using MOOCs, e.g. Alraimi, Zo & Ciganek (2015); Xu (2015); Lim, Tang & Ravichandran (2017). Thus, consistent with the previous research, it is hypothesized as follows:

H10. Intrinsic motivations will have a significant, positive effect on the continuance intention to use MOOCs.
H11. Intrinsic motivations will have a significant, positive effect on the perceived usefulness.

H12. Intrinsic motivations will have a significant, positive effect on the perceived ease of use.

- **Effect of Willingness to Earn a Certificate (WEC) on Continuance Intention (CI)**

In the majority of MOOCs, as in the case of Rwaq, the certificates of course completion are granted to the learners upon passing all course requirements. In the present study, willingness to earn a certificate of course completion is defined as a motivation that encourages the individuals to join Rwaq courses with the aim of obtaining the certificates for different purposes. In the MOOCs' context, Xiong, Li, Kornhaber, Suen, Pursel & Goins (2015) revealed that the extrinsic motivation (obtaining certificates) has a significant influence on learners' engagement in MOOCs. Also, the recognition and appreciation of MOOCs' certificates by job providers and regulatory bodies were found to have a significant impact on the MOOCs acceptance (Mohapatra & Mohanty, 2016). In the context of MOOCs continuance, this research is the first effort that examines the effect of the willingness to earn a certificate on learners' desire to persist in using Arabic MOOCs. As a result, the following hypothesis is proposed:

H13. The willingness to earn a certificate will have a significant, positive effect on the continuance intention to use MOOCs.

Research Methodology

This research adopts the sequential exploratory and explanatory mixed methods approaches for collecting the data using qualitative and quantitative techniques. The main objective of the exploratory mixed methods approach is exploring a phenomenon in depth at initial stage (Creswell & Plano Clark, 2007), particularly when the topic under investigation has not been researched before. In addition, this approach improves the reliability and validity of results and allows for a comprehensive understanding of the study phenomenon. Initially, a systematic literature review was conducted so as to determine the gaps and develop the research questions. After that, semi-structured interviews were carried out with the main intent of exploring the experts' perspectives regarding a set of factors that impact the continuance intention towards using Arabic MOOCs. In total, twenty-two participants took part in the interviews; two administrators of the Rwaq platform, ten instructors, and ten learners using the Rwaq platform. The code numbers of administrators of the Rwaq platform range between P1-P2, while the code numbers of instructors range between P3- P12, and the code numbers of learners range between P13-P22. A self-administered online questionnaire was used in a subsequent confirmatory phase to test the proposed theoretical model and hypotheses (Appendix A). The questionnaire was designed using closed-ended questions and five-point Likert type scale for responses. A pre-testing of the questionnaire was conducted by means of cognitive interviews, an expert panel review, and a pilot study. The total number of returned questionnaires was 1,303, of which 886 were usable for the data analysis as only that number of responses met the research criteria. But again, among 886 responses, two respondents were unengaged participants as they answered all the questions with the same single response. Therefore, their responses were excluded from further data analysis, leaving a total of 884 responses for the final data analysis. The final valid responses were coded into the Statistical Package for the Social Sciences (SPSS) version 23.0 for data screening tests in order to ensure the usability, reliability, and validity of the data. The tests include non-response bias, descriptive statistics of the demographic variables and construct items, linearity, outliers, normality, and collinearity. After examining the assumptions of the structural equation modelling (SEM) analysis technique, a two-step approach was applied as recommended by Anderson & Gerbing (1988). These two steps are: measurement model analysis and structural model analysis. Drawing upon the advantages of partial least squares structural equation modelling (PLS-SEM), Warp-PLS 5.0 was utilized for the present study. Finally, after conducting the measurement and structural model analyses, the explanatory mixed methods approach was adopted through carrying out semi-structured interviews. Eight learners using the Rwaq platform participated in these interviews in order to interpret the findings of the quantitative study, particularly the unexpected results. The code numbers of the participants range between P23 and P30.

Results and Discussion

- **Qualitative Findings**

Semi structured, one-to-one interviews were conducted to achieve the following goals:

1. Explore the perceptions of the learners, instructors, and administrators of the Rwaq platform on the influence of a set of factors driving the learners' continuance intention to participate in Arabic MOOCs.
2. Outline the potential relationships between the proposed factors listed previously.
3. Generate measurement items that better fit the context of this study to be tested in a subsequent quantitative phase.
4. Explore additional influential factors from the interviewees' perceptions to be included in the proposed research model.

The proposed factors discussed within the interviews formed the basis by which responses were grouped. The details about the analysis of interviews are presented in the following subsections.

A. Willingness to Earn a Certificate

According to the participants, willingness to earn a certificate is an influential and motivational factor which affects the learners' decision to continue using MOOCs. Generally, the objective of some learners is just to obtain certificates, while other are only looking for knowledge, whereas still others are wishing to obtain both a certificate and knowledge (P4). Mr. Fouad Al-Farhan, the Co-founder of Rwaq, for instance said that enquiries regarding the certificates granted by Rwaq is very common:

"*For Sure, if I was asked about the most frequent questions that the students ask to Rwaq, definitely my answer is the certificates. I can say that issues regarding certificates are asked on a daily basis. It is obvious that acquiring a certificate is becoming a high priority for learners. Furthermore, the non-accreditation of the certificates does not reduce the percentage of learners' participation in the platform. If the certificate was accredited, though, the number of students would increase significantly.*" (P1)

The main purposes of learners wanting to receive certificates from open platforms are their wishing to: demonstrate their mastery; support job applications; impress potential employers; and/or acquire benefits or promotions at work. As an example, a few participants said that:

"*For sure, certificates are important for getting job or for receiving career promotions. Individuals need proof — in other words, a recognised certificate.*" (P2)

Earning certificates gives learners a sense of achievement. For example, a few participants explained that:

"*Learners consider certificates as awards for their efforts, even when such certificates are not accredited. People care about obtaining certificates, even when those certificates may be useless to them.*" (P17)

One interviewee, on the other hand, attributed the lack of interest in certificates to the newness of the notion of open platforms in the Arabic community, as well as to the lack of trust that employers give to such platforms:

"*I do not think that obtaining certificates is an important factor in the meantime because open education platforms are new to the Saudi and Arab communities in general. Furthermore, companies' lack of trust in such platforms, the lack of seriousness which is accorded by educational institutions to such platforms' courses and exams, and their lack of familiarity with open learning systems reduce the turnout of students.*" (P11)

B. Intrinsic Motivations

From the discussions, the important role that intrinsic motivations play in encouraging learners to persist in using Rwaq was affirmed by the interviewees. The learners who love knowledge for its own sake (i.e. who are not interested in any of the benefits associated with study or employment) are one type of learner who participate in Rwaq (P1, P15). Some learners exploit the opportunity provided by open platforms to join courses which are in no way related to their respective fields of study or career because they are simply curious to explore new fields and expand their perceptions (P1, P3, P4, P7, P8, P9, P11, P12). Life-long learning is one of the intrinsic incentives that promotes individuals to use the platforms to constantly boost their knowledge and skills (P10). One participant believed that some individuals have a self-desire to seek out new experiences and challenges by means of online platforms (P15). Few respondents linked the intrinsic motivations that drive learning in Rwaq to the lack of care about certificates, which they considered an extrinsic form of motivation (P5, P8, P11, P12, P13, P15):

"*I think that, due to an increase in awareness, people became interested in knowledge and tried to improve themselves regardless of whether they received grades or obtained a certificate. Many students attended courses without paying any attention to whether they would receive certificates. It was enough for them to simply gain the knowledge that they had wanted to learn.*" (P5)

One participant, on the other hand, did not believe that learners join MOOCs based on their intrinsic motivations. Namely, she reported that:

"*I think the target of most of the students is to obtain a certificate or to develop the skills they need to succeed at university or in their jobs. I have never known of students who take courses simply for the enjoyment of the knowledge that they would obtain.*" (P17)

C. Perceived Reputation

Perceived reputation was viewed by the participants as an effective factor. In MOOCs, being taught by teachers from prestigious universities and institutions are an opportunity for many people around the world (P2, P8, P11, P13, P15). For example:
"*In open education, who can imagine that individuals can study law from Harvard University while residing in Riyadh? This is the biggest benefit offered by the platforms of open education, where they provide the best lecturers from the best universities in the best specialisations from any place from around the world so that individuals can learn at any place and time.*" (P2)

One participant expressed her pride and dream to be taught by lecturers from reputable institutions:

"*I believe that attending a course at Stanford University, the University of Cambridge, or any other reputable university would be a great thing and incomparable to attending courses from other less reputable institutions! Saudi students who study abroad prefer to join respectable and distinguished universities. Furthermore, Saudi society would be proud to have Saudi students who have graduated from reputable universities.*" (P15)

Popularity, the spread of the platform, and the number of its users are all motivations which encourage individuals to use the platform (P18, P21); for instance:

"*Rwaq has a large number of users. It could not attract this large number without having a good reputation.*" (P21)

Nevertheless, one participant held a different opinion, saying that the reputation of the instructor is not a powerful factor for using Rwaq:

"*The main factor that affects the decision of the participant to join a certain course is the title of the course and the 'demo video' that explains the course's contents and objectives. Being a free and open platform, the factor of the teacher's reputation is ineffective, except if the person is looking for a certain teacher who knows him or her already and has found that they teach courses over the platform. The general public are not academic, so they do not care whether the lecturer holds a PhD or is a lecturer or a professor.*" (P3)

D. Free Courses' Advantages

The participants reported that the openness of platforms is an important aspect for encouraging people to learn through such platforms. Free education is important for all individuals of different classes who wish to save money — particularly for that class of individuals who do not have a good financial situation, students, or the unemployed (P6, P12, P13, P15, P17, P18, P19, P21):

"*Open and free courses provide an excellent alternative for learners. The economic situation in Saudi Arabia, for example, has somehow become hard. The majority of registrants in these courses are seeking jobs or promotions, so they need free courses. If the platforms were not for free, the number of learners would fall.*" (P6)

Moreover, free education eases one's joining the greatest number of courses according to one's needs without restrictions (P18, P21). In general, open and free education is the solution for spreading education to all people who cannot learn at universities (P2, P12). Some respondents believe that free courses provide them with opportunities to try the course, even if they are not sure about their commitment to completing the course for any reason, such as shortage of time or feeling bored (P14, P16, P22). Nevertheless, free courses may provide learners, especially Saudis, negative impressions about those courses. As one participant related:

"*I think that Saudi people do not know the value of anything unless they pay for it. They think if the courses are free, they will be less valuable. Having free courses gives them the negative impression that they are not high-quality courses. This is simply due to their not understanding the notion of open educational platforms.*" (P9)

E. Perceived Usefulness

From the interviews, perceived usefulness was seen by all the respondents as a key and necessary factor in making the decision as to whether or not to use MOOCs. All the participants agreed that Rwaq is a valuable source of knowledge for all individuals, whether they be students, employees, job seekers, unemployed, etc. Students can also take advantage of open platforms to discover specialisations (P3, P14). As one of the participants commented:

"*Some students who have not specialised yet may benefit from courses provided by the platform by viewing some specialisations and discovering their tendencies. This, in turn, enables them to choose an appropriate specialisation at universities.*" (P3)

All the respondents believe that the usefulness of Rwaq for students in universities is that of complementing curricula and expanding knowledge in their fields. For example, learners can use MOOCs to practice the application of what they learned in class (P22). Also, a few participants reflected that platforms enable learners to gain and understand the information in different ways than from the way they learn them at universities (P12, P13, P15).

Modern generations prefer receiving information via audio/video materials. So, as one of the participants illustrated, the platforms are a useful source for them:

"*The modern generation does not like academic reading; instead, it has become more visual. Now, students prefer learning through audio, images, multimedia, and video. This generation has gotten used to them, which is different from my generation in that it was ready to read a whole chapter just in order to get one piece of information. I think multimedia materials are a better method of retaining information in mind.*" (P6)

F. Perceived Ease of Use

It also emerged from the interviews that there is no doubt amongst any of the respondents that the ease of use of platforms is an important factor which affects learners' intentions to continue using platforms. The ease of use of Rwaq is an attractive factor, particularly for optional tasks, which is often the case when using the platforms (P1, P2). Another respondent remarked that finding alternatives is an axiomatic solution when facing difficulties when using Rwaq:

"*I remember that I found one website that was difficult to use. Although it was useful, I will not use it again because it requires a lot of mental effort. When facing difficulties while using a website, I always try to find an easier alternative that offers me the same service. I do not want to waste my time just trying to understand how to use a system.*" (P15)

Accessing the desired information easily and quickly may increase learners' engagement in the platforms (P18). The Rwaq platform provides a user manual to both the learner and teacher which shows them how to use the platform in order to make their usage of it easier (P5). Moreover, the platforms should be easy to use in order to allow them to compete with other platforms and retain existing users (P7, P8):

"*If a platform is difficult to use, that will not encourage learners to join it; and, even if they do join it, they will soon leave it. The ease of use of any site, including educational platforms, is an integral part of the user's experience that has an impact on everything.*" (P8)

Many respondents believed that Rwaq is easy to use since it supports distance and flexible learning (at any time, from anywhere, and via any device) (P2, P3, P6, P13, P14).

G. Arabic Language Support

Obviously, the participants confirmed the important role of providing MOOCs in the Arabic language. Rwaq gives learners an Arabic atmosphere which, in turn, develops a sense of belonging. As the Co-founder of Rwaq propounded:

"*In one course offered by Rwaq, the explanation was in Arabic, along with use of teaching methods in English. I see this as being a good combination. The psychological factor is influential here because the lecturers like me — they speak the same language and accent, and give examples from Arabic culture. This feature contributed to the joining of more than 30000 students to one of the courses offered by Rwaq.*" (P1)

Also, Arabic platforms allow learners to understand subjects in Arabic contexts. Many informants believed that the majority of Arabic individuals cannot easily use English MOOCs because their English language skills may not be good enough, or may even be non-existent (P3, P5, P6, P8, P10, P13, P14, P16, P17, P20, P22):

"*One of my sisters is weak in English, and she cannot benefit from foreign platforms to develop her skills. She is in high school and wants to know more about specialisations in order to choose the one that best suits her. Hence, Arabic platforms are more appropriate for her.*" (P14)

Because the Arabic language is the mother tongue of the Arabic people, courses provided in Arabic make learning easier, quicker, and deeper for such people (P6, P7, P12, P14, P16, P19, P21):

"*Arabic courses are much easier to understand than courses delivered in other languages, as the learner will find it difficult to understand and analyse information if they are provided in a foreign language.*" (P6)

Some additional factors have been suggested by the participants, including diversity of subjects, accreditation of certificates, a cooperation between educational institutions and Rwaq, the provision of distinguished courses, marketing, the quality of courses, social influence, time management skills, and the contextualisation of the content provided by Arabic MOOCs.

In general, the participants have shown positive attitudes towards the proposed factors that affect learners' retention on the Arabic MOOC Rwaq platform. In addition, the findings of the interviews uncovered important dimensions of the proposed factors influencing the use of MOOCs. Moreover, the findings were helpful in developing measurement items for the questionnaire that better suit the context of the present study. The following hypotheses were formulated based on the findings of the interviews:

H14. Arabic language support will have a significant, positive effect on perceived usefulness.
H15. Arabic language support will have a significant, positive effect on perceived ease of use.
H16. Perceived reputation will have a significant, positive effect on willingness to earn a certificate.
H17. Willingnes to earn a certificate will have a significant, positive effect on perceived usefulness.
H18. Social influence will have a significant, positive effect on the continuance intention to use MOOCs.
H19. Social influence will have a significant, positive effect on perceived usefulness.

Figure 2 shows the revised proposed model after carrying out the interviews. Dashed and blue arrows and boxes in this figure indicate additional relationships and factors which were integrated with the proposed model according to the interviews' findings.

- **Quantitative Results**

This section presents the quantitative results of testing the developed model that were obtained from analysing the questionnaire data.

o **Data Screening**

A. Linearity

The nature of the relationships between the variables was examined using Warp-PLS. Most of the relationships are linear except for four which are non-linear, namely PEU→CI, ALS→CI, FCA→CI, and WEC→PU. As a result, Warp-PLS software was used in the present study as it takes into consideration the linear and nonlinear relationships when estimating the path coefficients.

B. Outliers

For each observed variable, the univariate outliers were examined by means of calculating the standardized value (z). Due to an extremely large sample size in this study, a cut off value of $|z|>4.0$ was selected as suggested by Hair, Black, Babin & Anderson (2010). In total, 54 observations were identified as univariate outliers for this study. For multivariate outliers, Mahalanobis distance (D^2) was measured using SPSS and then D^2 values were compared to 94.461 (the $\chi2$ value with a degree of freedom (df) = 56 observed variables and α = .001). Only one observation was found with $D^2=133.281$, which is deemed higher than the recommended value, 94.461 (Tabachnick & Fidell, 2007; Kline, 2011).
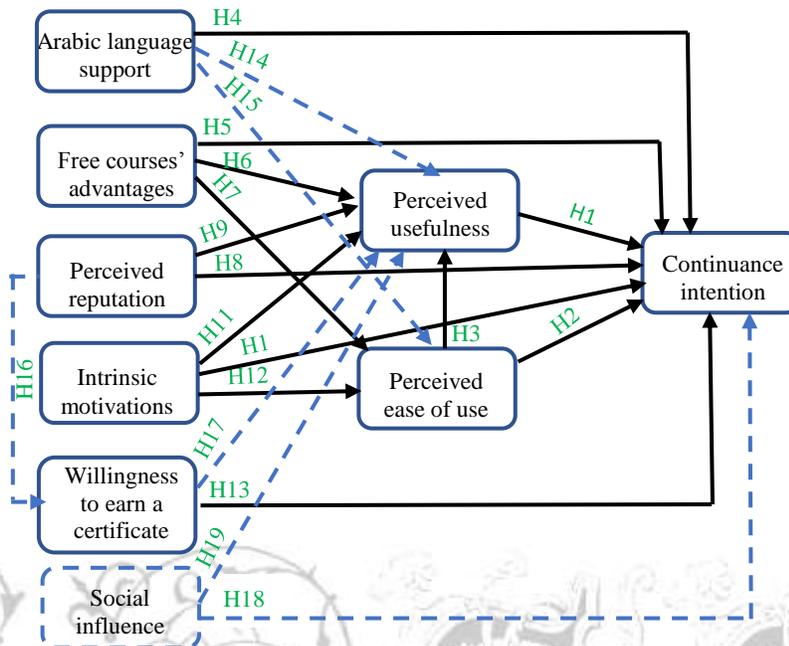
Figure 2: The revised proposed research model

After detecting the outliers, it is up to the researcher to select how to proceed. Deleting the outliers could improve the multivariate analysis in terms of obtaining a better model fit and accurate estimators (Osborne & Overbay, 2004). However, simply removing the outliers from the analysis may affect the generalisability (Harrington, 2009). Furthermore, it is not advisable to delete the outliers unless they are a result of a mistake in the experiment (Altman & Krzywinski, 2016). Two observations were detected as unengaged respondents. Unengaged response in this respect implies a suspicious response pattern, namely entering the same response for every single survey item (Park, Yoh & Park, 2015). Therefore, it was decided to eliminate only the unengaged responses as they clearly deviated from the anticipated ranges of response. Thus, 884 responses are remaining for subsequent analysis.

C. Normality of the Constructs' Items

It is impractical to check all aspects of the multivariate normality (Kline, 2011). Univariate distributions can assist in detecting aspects of multivariate normality (Kline, 2011). The univariate normality for each observed variable was assessed via skewness and kurtosis statistics. Kline (2011) suggested that the absolute values of skewness and kurtosis that exceed 3.0 and 10.0 respectively may indicate a non-normal distribution. Accordingly, it was illustrated that all the observed variables showed satisfactory values of skewness and kurtosis.

D. Collinearity

Kock (2015a) recommended reporting the full collinearity VIFs, which accounts for both vertical and lateral collinearity, along with the block variance inflation factors (VIFs) assessment which measures the severity of vertical collinearity in the model. Both tests are offered by Warp-PLS. The absence of multicollinearity can be inferred when the value of full collinearity VIFs <3.3 (Kock & Lynn, 2012). Similarly, the value of Block VIFs <3.3 suggests the non-existence of vertical multicollinearity in a latent

variable block. Accordingly, the results indicate that the multicollinearity and vertical collinearity are not a concern in the proposed model.

- **Structural Equation Modelling (SEM) Analysis**

A. Assessing the Measurement Model

Different evaluations should be applied to validate both the reflective and formative measurement models (Henseler, Ringle & Sinkovics, 2009). When the measurement model assessment shows evidence of satisfactory reliability and validity, the next step is evaluating the structural model. The reflective measurement model comprises three factors: perceived usefulness, perceived ease of use, and continuance intention. On the other hand, the formative measurement model consists of six factors: Arabic language support, free courses' advantages, perceived reputation, intrinsic motivations, the willingness to earn a certificate, and social influence.

A.1. Reflective Measurement Model

For internal consistency reliability, all the constructs met the guideline where all the values were greater than 0.8. The results of the tests for the convergent validity exceeded the recommended threshold values, where the factor loading values were significant and above .70, the composite reliability (CR) values were >.70, and the average variance extracted (AVE) values were >0.500. The result of discriminant validity is satisfactory where all the inter-construct correlations are lower than the square roots of the AVEs, the indicators' loadings are above .70, and the cross-loadings are below 0.32.

A.2. Formative Measurement Model

Most indicators have shown the ideal value of variance inflation factor (VIF), less than 3.3. PR5, IM1, and SI1 have VIF values below 5, while SI2 and SI3 have VIF values lower than 10, which means that no harmful multicollinearity was detected among the formative indicators. Further, the results of indicators weights and p values revealed that all the weights are significant at the 0.001 level. In addition, all the path coefficients (indicator weights) are greater than .100. Therefore, all the indicators were kept in the measurement model for further analysis.

For discriminant validity assessment, the correlations between the formative constructs and the remaining constructs are below .71, indicating that the constructs differ from each other (non-presence of redundancy). In summary, the assessment of the measurement model showed evidence that the measurement model fulfilled the desired quality criteria. Therefore, the next step is evaluating the structural model.

B. Assessing the Structural Model

B.1. Assessment of Coefficient of Determination, R^2

The antecedents of the perceived usefulness and the perceived ease of use explain 53.3% (relatively moderate) and 22.1% (relatively weak) of the variance in perceived usefulness and perceived ease of use, respectively. The perceived reputation explains 21.8% (relatively weak) of the variance in the willingness to earn a certificate. Finally, the antecedents of the continuance intention explain 49.1% (relatively moderate) of the variance in the continuance intention.

B.2. Assessment of Effect Size, f^2

Most of the variables were shown to have a small effect size, while five variables were revealed to have a too weak effect (FCA→PU, FCA→CI, WEC→CI, SI→PU, and SI→CI), and only two variables have had a medium effect (PR→WEC and IM→CI). It was revealed that the values of the effect size range between 0.007 and 0.313.

B.3. Predictive Relevance, Q^2

The predictive relevance of each of the endogenous variables (PU, PEU, WEC , CI) exceeds the cut-off point proposed in the literature, as all the values are higher than zero.

B.4. Model Fit and Quality Indices

In Warp-PLS, there is no established universal GoF indices as in CB-SEM tools. Thereby, five model fit and quality indices provided by Warp-PLS were used in this study, namely the average path coefficient (APC), the average R2 (ARS), the average block variance inflation factor (AVIF), the average full collinearity VIF (AFVIF), and the Tenenhaus GoF (GoF). All the indices showed satisfactory values as following: APC=0.155, p<0.001; ARS=0.366, p<0.001; AVIF=1.704; AFVIF=1.880; and GoF=0.488, demonstrating that the model fits the data well.

B.5. Assessment of the Proposed Hypotheses

In this study, the null hypothesis is rejected (accepting the alternative hypothesis) if the p value <0.05. The p values in this study were reported using a one-tailed test supported by Warp-PLS as it is suggested to use this type of test if the path coefficients are hypothesized to have a sign (+ or -) (Kock, 2015b). Fourteen out of nineteen hypotheses were supported by the data (positive and significant path). The hypotheses H4, H7, H8, and H17 were rejected because the p values associated with these hypotheses were not statistically significant. H14 was not supported due to the negative sign of the estimated path coefficient, which is the opposite of what was assumed.

B.6. Modifying the Structural Model by Removing the Non-Significant Paths (Theory Trimming)

As shown in the preceding section, five hypotheses out of nineteen hypotheses were not accepted. Hence, the structural model was re-specified through eliminating the insignificant correlations to possibly yield a parsimonious model that better fits the observations (Chandio, 2011). The model fit indices of the initial model are approximately similar to the model fit indices of the modified model (the model without the insignificant paths). Consequently, the model was modified by deleting the insignificant paths. Figure 3 demonstrates the structural model results of the final revised model after deleting the non-significant paths.

Table 3 presents the antecedents that have the strongest influence on each of the endogenous variables after re-estimating the model. Only the value of APC showed improvement after re-estimating the model where the average strength of the relationships between the variables is increased. In contrast, the model before re-specification has a larger average predictive power of the exogenous variables (ARS), a lower degree of vertical collinearity (AVIF), a lower degree of multicollinearity (AFVIF), and a larger explanatory power (GoF). Consequently, it can be concluded that deleting the insignificant correlations from the model did not produce better data-model fit.

B.7. Indirect Effects

This study did not formulate hypotheses regarding the indirect effects and mediation. The results of mediation analysis and indirect effects using Warp-PLS indicate that all the indirect effects on the

continuance intention are statistically non-significant. Only the following indirect effects on perceived usefulness were found to be statistically significant:

1. The indirect effect of ALS on PU mediated by PEU.
2. The indirect effect of IM on PU mediated by PEU.
3. The indirect effect of PR on PU mediated by WEC.

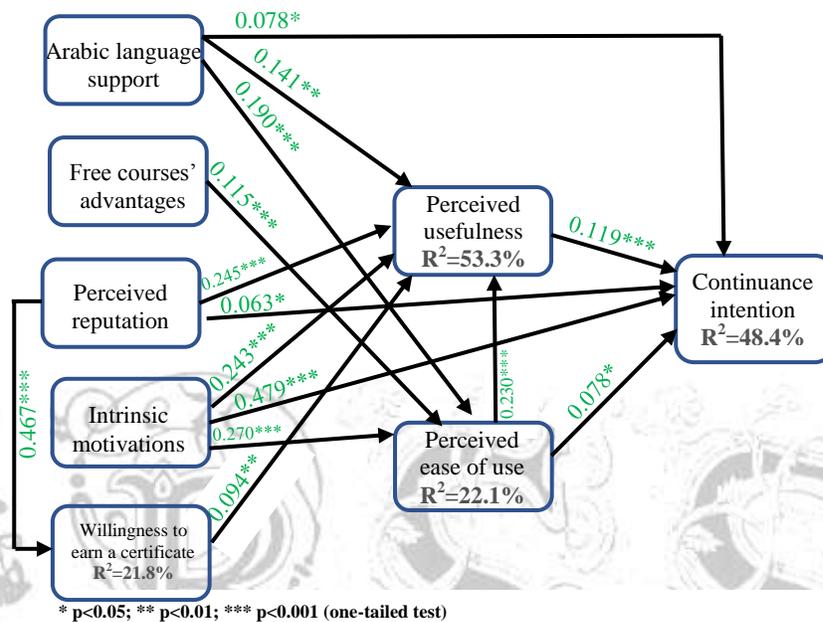
* p<0.05; ** p<0.01; *** p<0.001 (one-tailed test)

Figure 3: Structural model results (hypotheses testing) of the final revised model

Table 3: Strength of the influence of the antecedents of the endogenous variables on the endogenous variables.

Endogenous variable	Antecedent	Path coefficient, β
PU	PR	0.245
	IM	0.243
	PEU	0.230
	ALS	0.141
	WEC	0.094
PEU	IM	0.270
	ALS	0.190
	FCA	0.115
WEC	PR	0.467
CI	IM	0.479
	PU	0.119
	ALS	0.078

PEU	0.078
PR	0.063

Discussion of the Quantitative Results

- **The Testing of the Hypotheses**

This study set out to examine the factors which motivate learners to develop positive intentions towards continuing to use Arabic MOOCs exemplified by the Rwaq platform. The TAM was adopted as a theoretical foundation. Many variables were added, however, to the TAM by the researchers namely, Arabic language support, free courses' advantages, perceived reputation, intrinsic motivations, the willingness to earn a certificate, and social influence. The empirical results supported the effectiveness of extending the TAM for investigating the adoption of MOOCs in the Arabic world. It was highly expected that the hypothesis of the positive effect of PU on CI would be supported. This result concurs with TAM, UTAUT, ISCM, and with the results of previous studies. This finding strongly and obviously implies that if the individuals achieve their educational goals in MOOCs (e.g. acquiring useful knowledge or skills and learning effectively), they will readily use MOOCs in the future. The significant and positive influence of the perceived ease of use on the intention to persist to use platforms is consistent with the TAM model and with prior research findings.

Nevertheless, this result does not agree with the results reported by Xu (2015) and Chu, Ma, Feng & Lai (2015), who stated that learners' intention to attend MOOCs is not significantly affected by the perceived ease of use. The ease of use of the platforms is an effective factor, particularly because engagement in the platforms is usually not mandatory. Therefore, it is obvious that an easy-to-use platform could affect a learner's preference, while difficulties whilst using the platform may create learner resistance. The positive influence of PEU on PU revealed in this research can be justified by stating that if learners found that the platform requires minimum effort to learn and use (e.g. it provides a friendly user interface or organised contents), their perceptions about the usefulness of the platform would be strengthened. This is because the ease of use of platforms would save them time and effort, thereby allowing them to learn more effectively, complete more tasks quickly and easily, and engage more in the platforms.

Although the English level of most of the respondents (n=592) was above the level of novice, the factor of Arabic language support was important for deciding whether or not to continue using MOOCs. The obvious explanation for this result is that Arabic is their native language and, hence, their being able to learn via Arabic-supported platforms would be easier and better for them (P23, P27, P30). Arabic language support is the fourth strongest indicator of perceived usefulness. The acceptance of hypothesis 15 (the positive effect of ALS on PU) was anticipated because it was thought that Arabic-speaking learners would find courses provided in Arabic more useful for them seeing as they would be able to understand the topics more easily, quickly, and deeply which would, in turn, help them to perform the required tasks quickly. The result of not supporting hypothesis 4 (the positive effect of FCA on CI) does not concur with the result published by Alraimi, Zo & Ciganek (2015). They had shown that perceived openness significantly and positively affects users' intention to continue using MOOCs. The most likely explanation for this surprising result is that learners in MOOCs have different goals and tasks. In general, people are willing to pay for courses if these courses are effective Huanhuan & Xu (2015). Individuals who need some courses to understand difficult subjects in universities and for the purpose of helping them to pass exams, to gain some needed skills for completing essential tasks at work, or to prepare for some required tests, like IELTS or TOEFL, are ready to use MOOCs and sign up for courses, even when those courses are not free (P23). Rejecting hypothesis 8 (the positive effect of FCA on PU) accords with earlier studies conducted by Wu & Chen (2017) and Sa, Lee, Kang, Gim & Kim (2016), who revealed that the openness of MOOCs does not have a significant influence on perceived usefulness. This finding, however, is contrary to that of Alraimi, Zo & Ciganek (2015) who indicated that perceived openness has a positive and significant impact on perceived usefulness. This rather unexpected result could be due to individuals' evaluating the usefulness of

MOOCs because they were able to gain beneficial knowledge or skills which they needed in an easy and enjoyable way irrespective of whether the courses were free or not. As expected, the significant and positive influence of the advantages of free courses on the perceived ease of use was supported in the present study. This result matches a result reported in an earlier study by Wu & Chen (2017). On the other hand, this result is not aligned with the result found by Sa, Lee, Kang, Gim & Kim (2016), who showed evidence that the effect of openness on perceived ease of use is not significant. The rationale behind supporting hypothesis 12 (the positive effect of FCA on PEU) is that free courses allow learners of different classes to join any course easily without the restriction of paying money. In other words, the free courses let all people— particularly individuals in a less fortunate financial situation— to overcome the difficulties associated with joining the platforms.

Accepting hypothesis 5 (the positive effect of PR on CI) reflects prior research findings, as denoted earlier. On the other hand, this result is different from a result cited by Huanhuan & Xu (2015), who found that perceived reputation has an insignificant impact on the intention to adopt MOOCs. Rationally, learners would want to continue to use MOOCs if they have a good reputation in terms of providing high quality courses taught by experts and qualified teachers (P24, P29). This study confirmed that perceived reputation is the strongest indicator of perceived usefulness. Thus, perceived reputation acts as an essential faith in determining perceptions regarding the usefulness of platforms. This means that, if the courses are taught by non-qualified teachers, or if the courses are of bad quality, the learner will not learn effectively and, hence, not perceive the usefulness of the courses, thereby making it more likely that they may abandon the platform. As anticipated, perceived reputation has a significant positive effect on the willingness to earn a certificate.

This result strongly suggests that learners are eager to obtain certificates from reputable and well-respected platforms seeing as such certificates are appreciated by employers and educational institutions. The intrinsic motivations factor, such as enjoyment, curiosity, and interest, was found to be the strongest antecedent of the continuance intention towards using MOOCs. This result was expected and coincides with the findings of previous studies, as was shown earlier. Nevertheless, it was shown that perceived playfulness (Chu, Ma, Feng & Lai, 2015) and perceived enjoyment (Mulik, Yajnik & Godse, 2016) have no significant relation with learners' intention to use MOOCs. Because participation in MOOCs mainly depends on an individual's interest in using open platforms (Liyanagunawardena, Adams & Williams, 2013), the intrinsic motivations factor is the most influential predictor of the continuance intention. This is due to the fact that participation in such platforms is primarily voluntary rather than mandatory, as well as to the fact that the certificates given are not official. Additionally, the factor of intrinsic motivations has the second strongest impact on perceived usefulness. Clearly, learners driven by intrinsic motivations perceived the usefulness of platforms since they will be able to satisfy their curiosity to explore interesting topics and learning new, diverse, challenging or enjoyable things by using them (P23). Moreover, the intrinsic motivations factor emerged as the strongest predictor of perceived ease of use. This result contradicts a result cited by Xu (2015), who revealed that computer playfulness has an insignificant positive correlation with perceived ease of use. The rationale is that individuals who enrol in courses because of their intrinsic motivations underestimate the difficulty associated with using the platforms. This is because they enjoy the activity itself and do not realise the strenuous effort or time which would be required of them when using them (P23; Venkatesh, 2000).

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This study has been unable to demonstrate the significant influence of the willingness to earn a certificate on the continuance intention. This result is analogous to a result of Adamopoulos (2013), who found a positive but insignificant relation between awarding certificates and course completion. It seems possible that this result is due to the fact that the certificates issued by platforms such as Rwaq are neither accredited nor even verified, thereby diminishing their value and appreciation by employers (P27, P28, P30). So, the decision whether or not to use MOOCs is not dependent on providing certificates. Another possible alternative explanation of this finding is that some individuals have a goal to learn the interesting parts of a course without the need to complete the whole course and acquire the certificate. In this study, the willingness to earn a certificate was found to affect the perceived usefulness both positively and significantly. This result aligns with the research conducted by Wu & Chen (2017), where social recognition (i.e. the recognition of MOOCs' credentials) was found to have a significant impact on perceived usefulness. In addition, this hypothesis was expected to be supported because a high percentage of the respondents (42.53%) were students and unemployed who might value the attainment of such certificates in order to apply to new jobs more than those respondents who were employees. The result of this study shows that social influence has a significant but negative effect on learners' intention to continue using MOOCs. This finding is similar to the results reported by Zhou (2016), Mulik, Yajnik & Godse (2016), and Gao & Yang (2015). They all revealed a negative correlation between the social influence and intention to use MOOCs, but not one which is significant. This unexpected finding suggests that positive encouragement from others may yield an opposite result, where it leads learners to abandoning the platform. This result is inconsistent with UTAUT, TRA, TPB, and previous studies mentioned earlier, all of which confirmed the positive and significant impact that social influence has on using technologies. The negative sign of the path coefficient could be attributed to the existence of outliers. Also, it can be said that the impact of intrinsic motivations is very strong, meaning that people join MOOCs because they are driven by internal rewards rather than external pressure, like social influences (P30). In addition, this result can be attributed to the fact that 'word-of-mouth' exerts a stronger positive impact on shaping individual's attitudes and intentions to use MOOCs during the initial adoption phase, but not during the post-adoption phase (Venkatesh, Morris, Davis & Davis, 2003). This is because inexperienced individuals, in using MOOCs, think highly of recommendations from friends and trusted relatives and rely on them seeing as they do not have complete information about the innovation. Venkatesh, Morris, Davis & Davis (2003) and Yoon & Rolland (2015) stated that the correlation between social influence and behavioural intention was found to be insignificant in previous technology acceptance studies in voluntary contexts. Thus, another

reasonable explanation for this finding is that the opinions of trusted persons, like supervisors' proddings or experts' opinions, could have a positive impact on people who perform mandatory tasks rather than voluntary ones. In addition, this study found that learners' perceptions of the usefulness of MOOCs is not significantly impacted by social influence. Wu & Chen (2017) and Xu (2015) showed different findings, such that the social influence factor affects perceived usefulness both positively and significantly. The participants attributed this result to the fact that the perceived usefulness of courses depends on the learners' insights— something which might be different from one person to another (P23, P25, P28); for example:

"*I do not rely mainly on my friends' views when joining particular courses in Rwaq because I believe that every person has his own experience, impression, and goal. So, I attend a course based on my goals, interests, requirements, and perceptions, regardless of the opinions that my friends or relatives have. As an example, some friends may strongly suggest a basic course about learning the Java programming language because they found it helpful. I, however, am proficient in Java, so my goal is instead to find more advanced courses.*" (P23, Learner)

- **The Developed Model's Performance**

It was found that the values of explained variance in perceived usefulness, perceived ease of use, and continuance intention improved after adding new variables to the original TAM model. The explained variances in PU, PEU, and CI were 25.4%, none, and 31.2%, respectively in the original TAM model whereas they were 53.3%, 22.1%, and 48.4%, respectively in the TAM integrated with ALS, FCA, PR, IM, and WEC (the final proposed model). To answer RQ7, the performance of this research model was compared to the performance of the models developed by similar previous MOOCs studies by using R^2, the explained variance in the perceived usefulness, perceived ease of use, and behavioural intention (BI) /continuance intention as shown in Table 4.

Table 4: Comparing the explained variance in PU, PEU, and BI/CI of models proposed by previous studies to the present research model.

Study	Variance Explained (R^2)		
	PU	**PEU**	**BI/CI**
Wu & Chen (2017)	94.8%	46.8%	95.7%
Junjie (2017)	37.8%	None	79.4%
Mulik, Yajnik & Godse (2016)	None	None	72.9%
(Mohapatra & Mohanty (2016)	None	None	68.1%
Gao & Yang (2015)	42%	None	66%
Alraimi, Zo & Ciganek (2015)	54%	None	64.4%
Zhou (2016)	None	None	64.1%
Zhang, Yin, Luo & Yan (2017)	60%	47%	62.2%
Yang, Shao, Liu & Liu (2017)	34.4%	37.1%	47.2%
Aharony & Bar-Ilan (2016)	None	None	25%
This research	53.3%	22.1%	48.4%

Conclusion

The main goal of the current study was to address the gaps in the literature related to information technology continuance intention by developing a theoretical model with which to predict learners' readiness to continue using Arabic MOOCs. Drawing on the Technology Acceptance Model (TAM), the developed model includes eight diverse factors: perceived usefulness, perceived ease of use, Arabic language support, free courses' advantages, perceived reputation, intrinsic motivations, willingness to earn a certificate, and social influence. Based on the extensive literature review, it was found that there is no published study which investigates the factors that drive learners' intention to continue using Arabic

MOOCs. Therefore, this work contributes to the existing knowledge of MOOCs' continuance intention by providing the following main contributions:

1. Advancing theories by extending the TAM with regards to new context: the continuance intention to use Arabic MOOCs from learners' perspective.
2. Providing the validated model of MOOCs continuance intention which can be tested by researchers in different cultural contexts.
3. Validating the effect of new constructs that have not been examined previously in the context of MOOCs' acceptance/continuance. These new constructs include Arabic language support, the willingness to earn a certificate, and free courses' advantages.
4. Providing validated questionnaire items which can be adapted in future research on MOOCs' acceptance and continuance.
5. Providing empirical evidence of the successful extension of TAM where the majority of the research hypotheses (14 out of 19 hypotheses) were accepted.

Based on the results obtained in this study, some insights and recommendations were put forward for MOOC providers and instructors to inform the instructional design and pedagogical approaches that may be adopted in future MOOCs:

1. Since the intrinsic motivations factor has appeared to be the strongest indicator of the continuance intention and perceived ease of use, MOOC developers could increase the impact on MOOC participants by designing platforms and courses in a way that promotes learners' enjoyment, curiosity, and interest. Keeping learners in a flow state, referred to as 'flow experience' (Csikszentmihalyi, 1988), is recommended.
2. The perceived usefulness of the courses is a key incentive for learners to continue using MOOCs. The finding of this research points to the need for MOOC developers and teachers to provide courses that meet learner requirements. Seeing as learners using MOOCs have a broad range of motivations and needs, a good way to do so would be to use a survey for taking their opinions about their courses, as well as what they expected from such courses.
3. According to the results of this study, the development of a positive intention to persist in using MOOCs significantly depends on perceived ease of use. Accordingly, MOOC developers should make the method with which platforms are used simple and understandable such as adopting the following approaches:
   - Design user-friendly and informative interfaces.
   - Organise the contents of the platform for easy and quick access.
4. Given that perceived reputation stands out as the strongest antecedent of perceived usefulness, it is reasonable for MOOC developers to distinguish themselves by hiring qualified lecturers or experts from renowned institutions. Shedding light on the expertise of the teachers that they have hired and their achievements by means of presenting their CVs in detail would be sufficient.
5. It was shown that Arabic language support has a significant impact on the continuance intention, perceived usefulness, and perceived ease of use of those who participated in this research. As such, MOOCs providers should concentrate on providing courses in Arabic in order to make the learning experience easy and effective. Teachers can also contextualise the content of the courses to better fit the Arabic culture of the learners, thereby helping them to understand the contents better.
6. It was found that the perceived ease of use is significantly affected by providing free courses. Consequently, MOOCs providers are highly encouraged to offer tuition-free courses for all persons interested in learning, which is one of the main features of MOOCs.
7. As expected, the willingness to earn a certificate significantly influences the perceived usefulness of MOOCs. Therefore, developers should take this into consideration and try their best to cooperate with universities and academically accredited entities to grant accredited and verified certificates to those who have completed their courses.
8. The results of this research do not suggest that social influence motivates learners to continue using MOOCs, nor do they strengthen their beliefs about MOOCs usefulness. Developers might want to

think of ways of meeting or exceeding learners' expectations, as well as convincing them and achieving their satisfaction rather than focusing on external social pressures coming from persons like supervisors or friends. For example, MOOCs providers may constantly survey users' views regarding the provided courses and their suggestions for future improvements. In this regard, it is also good to leverage tools for analysing learners' data in the platform, such as discussion forums, performance on quizzes and assignments, time spent on tasks, video watching, etc. One of the advantages of learning analytics is grouping the participants who share the same interests into a subpopulation of learners (Khalil, Taraghi & Ebner, 2016). This is valuable because learners may be influenced by the beliefs of others who hold similar interests.

The current research targeted the learners in an academic and Arabic MOOCs: Rwaq platform. There are other Arabic platforms of different types. Further research is recommended to investigate the factors affecting the retention of users in different types of platform. Moreover, a cross-sectional survey was used for this study. Seeing as the behaviours of individuals are dynamic, though, it is recommended that future studies employ longitudinal research. Longitudinal research can shed light on the development of users' behaviours and expand the understanding of the interrelationships between the variables under investigation. The final limitation of this study is that the effects of moderator variables on the relationships between the factors were not examined. It is suggested that future researches study the impact of moderators, such as age, gender, occupation, highest level of education achieved, or the field of the course (e.g. mathematics, computer science, religion, etc.) on the relationships between the variables. The results presented in this study are useful for accelerating the progress of the platforms forward, particularly in the Arab region. Finally, testing the model developed in this study in different cultural contexts and settings would be useful to generalise the results obtained in this study.

References

Abdullah, F. & Ward, R. (2016). Developing a General Extended Technology Acceptance Model for E-Learning (GETAMEL) by analysing commonly used external factors. *Computers in Human Behavior*, 56, 238-256.

Adamopoulos, P. (2013). What makes a great MOOC? An interdisciplinary analysis of online course student retention. In: *Proceedings of The 34th International Conference On Information Systems, ICIS*. Milano, Italy. pp.1-21.

Adham, R.S. & Lundqvist, K.O. (2015). MOOCs as a method of distance education in the Arab world–a review paper. *European Journal of Open, Distance and E-learning*, 18(1), 123-138.

Aharony, N. & Bar-Ilan, J. (2016). Students' perceptions on MOOCs: An exploratory study. *Interdisciplinary Journal of e-Skills and Life Long Learning*, 12, 145-162.

Alario-Hoyos, C., Estévez-Ayres, I., Pérez-Sanagustín, M., Kloos, C.D. & Fernández-Panadero, C. (2017). Understanding learners' motivation and learning strategies in MOOCs. *The International Review of Research in Open and Distributed Learning*, 18(3), 119-137.

Alkharang, M.M. (2014). *Factors That Influence the Adoption Of E-Learning: An Empirical Study In Kuwait*. PhD thesis. Brunel University London. Available from: http://bura.brunel.ac.uk/handle/2438/11447 [Accessed 6th September 2016].

Alraimi, K.M., Zo, H. & Ciganek, A.P. (2015). Understanding the MOOCs continuance: The role of openness and reputation. *Computers & Education*, 80, 28-38.

Altman, N. & Krzywinski, M. (2016). Points of significance: analyzing outliers: influential or nuisance?. *Nature Methods*, 13(4), 281-282.

Anderson, J.C. & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.

Atiaja, L. N. A. & Proenza, R. S. G. (2016). The MOOCs: origin, characterization, principal problems and challenges in Higher Education. *Journal of e-Learning and Knowledge Society*, 12(1), 65-76.

Atkins, D.E., Brown, J.S. & Hammond, A.L. (2007). *A Review of The Open Educational Resources (OER) Movement: Achievements, Challenges, And New Opportunities*. Report to the William and Flora

Hewlett Foundation. Creative common. Available from: https://www.issuelab.org/resources/7645/7645.pdf [Accessed 23rd December 2015].

Bandyopadhyay, K. & Fraccastoro, K.A. (2007). The effect of culture on user acceptance of information technology. *Communications of the Association for Information Systems*, 19, 522-543.

Bayeck, R.Y. (2016). Exploratory study of MOOC learners' demographics and motivation: The case of students involved in groups. *Open Praxis*, 8(3), 223-233.

Bhattacherjee, A. & Lin, C.P. (2015). A unified model of IT continuance: three complementary perspectives and crossover effects. *European Journal of Information Systems*, 24(4), 364-373.

Bhattacherjee, A. (2001). Understanding information systems continuance: an expectation-confirmation model. *MIS Quarterly*, 25(3), 351-370.

Brahimi, T. & Sarirete, A. (2015). Learning outside the classroom through MOOCs. *Computers in Human Behavior*, 51, 604-609.

Chandio, F.H. (2011). *Studying Acceptance of Online Banking Information System: A Structural Equation Model*. PhD thesis. Brunel Business School, Brunel University London. Available from: http://v-scheiner.brunel.ac.uk/handle/2438/6153 [Accessed 15th March 2017].

Chang, I.C., Liu, C.C. & Chen, K. (2014). The effects of hedonic/utilitarian expectations and social influence on continuance intention to play online games. *Internet Research*, 24(1), 21-45.

Che, X., Luo, S., Wang, C. & Meinel, C. (2016). An attempt at MOOC localization for Chinese-speaking users. *International Journal of Information and Education Technology*, 6(2), 90-96.

Chu, R., Ma, E., Feng, Y. & Lai, I.K. (2015). Understanding learners' intension toward Massive Open Online Courses. In: *International Conference on Hybrid Learning and Continuing Education*. Wuhan, China: Springer International Publishing. pp.302-312.

Clark, K.R., Vealé, B.L. & Watts, L.K. (2017). A review of the use of Massive Open Online Courses (MOOCs) in medical imaging education. *Internet Journal of Allied Health Sciences and Practice*, 15(2), 1-6.

Class Central. (2018). *Languages*. Available from: https://www.class-central.com/languages [Accessed 6th August 2018].

Creswell, J.W. & Plano Clark, V.L. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA, Sage.

Csikszentmihalyi, M. (1988). The flow experience and its significance for human psychology. In: *Optimal Experience: Psychological Studies of Flow in Consciousness.* New York: Cambridge University Press. pp.15-35.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

Davis, H., Dickens, K., Leon, M., Sánchez-Vera, M. & White, S. (2014). MOOCs for universities and learners- an analysis of motivating factors. In: *Proceedings of the 6th International Conference on Computer Supported Education*. Barcelona, Spain. pp.105-116.

De Langen, F. & van den Bosch, H. (2013). Massive Open Online Courses: disruptive innovations or disturbing inventions?. *Open Learning: The Journal of Open, Distance and e-Learning*, 28(3), 216-226.

Feldman, P.M., Bahamonde, R.A. & Velasquez Bellido, I. (2014). A new approach for measuring corporate reputation. *Revista de Administração de Empresas*, 54(1), 53-66.

Foroudi, P., Melewar, T.C. & Gupta, S. (2014). Linking corporate logo, corporate image, and reputation: An examination of consumer perceptions in the financial setting. *Journal of Business Research*, 67(11), 2269-2281.

Gao, S. & Yang, Y. (2015). Exploring users' adoption of MOOCs from the perspective of the institutional theory. In: *The Fourteen Wuhan Intonational Conference on E-Business Human Behavior and Social Impacts on E-Business*. Wuhan, China. pp.383-390.

Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). *Multivariate Data Analysis*. 7th edn. Upper saddle River, New Jersey: Pearson Education International.

Harrington, D. (2009). *Confirmatory Factor Analysis*. New York: Oxford University Press.

Henseler, J., Ringle, C.M. & Sinkovics, R.R. (2009). The use of partial least squares path modeling in international marketing. In: Rudolf R. Sinkovics & Pervez N. Ghauri (ed.), *Advances in International Marketing*. vol. 20. Bingley: Emerald Group Publishing Limited. pp.277–319.

Huanhuan, W. & Xu, L. (2015). Research on technology adoption and promotion strategy of MOOC. In: *Software Engineering and Service Science (ICSESS), 2015 6th IEEE International Conference*. IEEE. pp.907-910.

ICEF Monitor. (2016). *Annual Ranking Says Europe Still Leads on English Proficiency*. Available from: http://monitor.icef.com/2016/11/annual-ranking-says-europe-still-leads-english-proficiency/ [Accessed 2nd March 2017].

Im, I., Hong, S. & Kang, M.S. (2011). An international comparison of technology adoption: Testing the UTAUT model. *Information & Management*, 48(1), 1-8.

Jansen, D. & Schuwer, R. (2015). *Institutional MOOC Strategies in Europe. Status Report Based on A Mapping Survey Conducted in October - December 2014*. EADTU. Available from: http://www.eadtu.eu/documents/Publications/OEenM/Institutional_MOOC_strategies_in_Europe.pdf [Accessed 4th June 2016].

Jemni M. & Khribi M.K. (2017). Toward empowering open and online education in the Arab world through OER and MOOCs. In: Jemni M. & Kinshuk, Khribi M. (ed.), *Open Education: from OERs to MOOCs*. Berlin, Heidelberg: Lecture Notes in Educational Technology, Springer. pp.73-100.

Jha, S. & Bhattacharyya, S.S. (2013). Learning orientation and performance orientation: Scale development and its relationship with performance. *Global Business Review*, 14(1), 43-54.

Joo, Y.J., So, H.J. & Kim, N.H. (2018). Examination of relationships among students' self-determination, technology acceptance, satisfaction, and continuance intention to use K-MOOCs. *Computers & Education*, *122*, 260-272.

Junjie, Z. (2017). Exploring the factors affecting learners' continuance intention of MOOCs for online collaborative learning: An extended ECM perspective. *Australasian Journal of Educational Technology*, 33(5), 123-135.

Kaba, B. & Osei-Bryson, K.M. (2013). Examining influence of national culture on individuals' attitude and use of information and communication technology: Assessment of moderating effect of culture through cross countries study. *International Journal of Information Management*, 33(3), 441-452.

Khalil, M., Taraghi, B. & Ebner, M. (2016). Engaging learning analytics in MOOCs: the good, the bad, and the ugly. In: *International Conference on Education and New Developments*, Ljubljana, Slovenia. pp.3-7.

Kline, R.B. (2011). *Principles and Practice of Structural Equation Modelling*. 3rd edn. New York: Guilford Press.

Kock, N. (2015a). *WarpPLS 5.0 User Manual*. *Laredo. Texas, USA: ScriptWarp Systems*.

Kock, N. (2015b). One-tailed or two-tailed P values in PLS-SEM?. *International Journal of eCollaboration*, 11(2), 1-7.

Kock, N. & Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems (JAIS)*, 13(7), 546-580.

Lai, C., Wang, Q. & Lei, J. (2012). What factors predict undergraduate students' use of technology for learning? A case from Hong Kong. *Computers & Education*, 59 (2), 569-579.

Lim, C.L., Tang, S.F. & Ravichandran, P. (2017). A Study on the Mediation Effects of Intention to Enroll in MOOCs on its Actual Usage. In: *Proceedings of the 8th International Conference on E-Education, E-Business, E-Management and E-Learning*. Kuala Lumpur, Malaysia: ACM. pp.30-33.

Lin, X., Featherman, M. & Sarker, S. (2017). Understanding factors affecting users' social networking site continuance: A gender difference perspective. *Information & Management*, 54(3), 383-395.

Liyanagunawardena, T.R., Adams, A.A. & Williams, S.A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distributed Learning*, 14(3), 202-227.

Lu, J., Yu, C.S., Liu, C. & Wei, J. (2017). Comparison of mobile shopping continuance intention between China and USA from an espoused cultural perspective. *Computers in Human Behavior*, 75, 130-146.

Milligan, C. & Littlejohn, A. (2017). Why study on a MOOC? the motives of students and professionals. *The International Review of Research in Open and Distributed Learning*, 18(2), 92-102.

Mohapatra, S. & Mohanty, R. (2016). Adopting MOOCs for afforable quality education. *Education and Information Technologies*, 22(5), 2027-2053.

Mulik, S., Yajnik, N. & Godse, M. (2016). Determinants of acceptance of Massive Open Online Courses. In: *2016 IEEE Eighth International Conference on Technology for Education (T4E)*. Mumbai, India. IEEE. pp.124-127.

Mutawa, A.M. (2016). It is time to MOOC and SPOC in the Gulf region. *Education and Information Technologies*, 22 (4), 1651–1671.

Nabavi, A., Taghavi-Fard, M.T., Hanafizadeh, P. & Taghva, M.R. (2016). Information technology continuance intention: A systematic literature review. *International Journal of E-Business Research (IJEBR)*, 12(1), 58-95.

OECD (2007). *Giving Knowledge for Free: The Emergence Of Open Educational Resources*. Paris: OECD.

Osborne, J.W. & Overbay, A. (2004). The power of outliers (and why researchers should always check for them). *Practical Assessment, Research & Evaluation*, 9(6), 1-12.

Ouyang, Y., Tang, C., Rong, W., Zhang, L., Yin, C. & Xiong, Z. (2017). Task-technology fit aware expectation-confirmation model towards understanding of MOOCs continued usage intention. In: *Proceedings of the 50th Hawaii International Conference on System Sciences*. Hawaii. pp.174-183.

Pang, Y., Wang, T. & Wang, N. (2014). MOOC data from providers. In: *Enterprise Systems Conference (ES)*. Shanghai, China*:* IEEE. pp.87-90.

Pappano, L. (2012). The year of the MOOC. *The New York Times.* Available from: http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html?pagewanted=1 [Accessed 20th December 2015].

Park, Y., Yoh, T. & Park, M. (2015). Testing a leisure constraints model in the context of Asian international students. *International Journal of Sport Management, Recreation and Tourism*, 20(d), 58-83.

Pituch, K. A. & Lee, Y. K. (2006). The influence of system characteristics on E-learning use. *Computers & Education*, 47(2), 222-244.

Ridout, S. (n.d.). *Complete List of Arabic Speaking Countries 2017*. Available from: http://istizada.com/complete-list-of-arabic-speaking-countries-2014/ [Accessed 13th May 2017].

Rwaq.org. (2017). Available from: https://www.rwaq.org [Accessed 14th October 2017].

Ryan, R.M. & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54-67.

Sa, J.H., Lee, J.M., Kang, T.W., Gim, G.Y. & Kim, J.B. (2016). A study of factors affecting the intention of usage in MOOC. Advanced Science and Technology Letters, 127, 160-163.

Sallam, M.H. (2017). A review of MOOCs in the Arab world. *Creative Education*, 8, 564-573.

Sanchez-Gordon, S. & Luján-Mora, S. (2014). Web accessibility requirements for Massive Open Online Courses. In: *Proceedings of 5th International Conference on Quality and Accessibility of Virtual Learning*. Guatemala: Universidad Galileo, Departamento GES. pp.530-535.

Schwaiger, M. (2004). Components and parameters of corporate reputation-an empirical study. *Schmalenbach Business Review*, 56, 46-71.

Shah, D. (2016). *By the Numbers: MOOCS In 2016*. Available from: https://www.class-central.com/report/mooc-stats-2016/ [Accessed 1st May 2017].

Shrader, S., Wu, M., Owens-Nicholson, D. & Santa Ana, K. (2016). Massive open online courses (MOOCs): Participant activity, demographics, and satisfaction. *Online Learning*, 20(2), 199-216.

Sonwalkar, J. & Maheshkar, C. (2015). MOOCs: A massive platform for collaborative learning in globalized way. *Journal of Management Research and Analysis*, 2(2), 142-149.

Tabachnick, B.G. & Fidell, L.S. (2007). *Using Multivariate Statistics*. 5th edn. Boston: Allyn & Bacon/Pearson Education.

Tarhini, A., Hone, K. & Liu, X. (2014). The effects of individual differences on e-learning users' behaviour in developing countries: A structural equation model. *Computers in Human Behaviour*. 41, 153-163.

Tsai, Y.H., Lin, C.H., Hong, J.C. & Tai, K.H. (2018). The effects of metacognition on online learning interest and continuance to learn with MOOCs. *Computers & Education*, *121*,18-29.

UNESCO. (n.d.). *World Arabic Language Day.* Available from: http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/world-arabic-language-day/ [Accessed 6th October 2017].

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11(4), 342-365.

Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Mis Quarterly*, 27(3), 425-478.

Wangpipatwong, S., Chutimaskul, W. & Papasratorn, B. (2008). Understanding citizen's continuance intention to use e-government website: A composite view of technology acceptance model and computer self-efficacy. *The Electronic Journal of E-Government*, 6(1), 55-64.

Wu, B. & Chen, X. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. *Computers in Human Behavior*, 67, 221-232.

Wu, P.F. (2012). A mixed methods approach to technology acceptance research. *Journal of the Association for Information Systems*, 13(3), 172-187.

Xiong, Y., Li, H., Kornhaber, M.L., Suen, H.K., Pursel, B. & Goins, D.D. (2015). Examining the relations among student motivation, engagement, and retention in a MOOC: A structural equation modeling approach. *Global Education Review*, 2(3), 23-33.

Xu, F. (2015). Research of the MOOC study behavior influencing factors. In: *Proceedings of International Conference on Advanced Information And Communication Technology For Education*. Amsterdam, Netherlands: Atlantis Press. pp.18-22.

Yang, M., Shao, Z., Liu, Q. & Liu, C. (2017). Understanding the quality factors that influence the continuance intention of students toward participation in MOOCs. *Educational Technology Research and Development*, 65(5), 1195-1214.

Yoon, C. & Rolland, E. (2015). Understanding continuance use in social networking services. *Journal of Computer Information Systems*, 55(2), 1-8.

Zhang, M., Yin, S., Luo, M. & Yan, W. (2017). Learner control, user characteristics, platform difference, and their role in adoption intention for MOOC learning in China. *Australasian Journal of Educational Technology*, 33(1), 114-133.

Zhou, M. (2016). Chinese university students' acceptance of MOOCs: A self-determination perspective. *Computers & Education*, 92-93, 194-203.

Appendix: Questionnaire Items

The following table shows the English translation of the Arabic questionnaire which was distributed to Rwaq users in this study.

Construct	Item	Measure	References
Perceived Usefulness	PU1	Using Rwaq assists me in learning.	Alraimi, Zo & Ciganek (2015); Wu & Chen (2017)
	PU2	Using Rwaq helps me to develop my knowledge or skills.	Self-developed
	PU3	Joining a course in Rwaq increases my understanding of the subject of that course.	Self-developed
	PU4	Rwaq makes learning more effective (e.g. boosts the ability to learn through online learning, flexibility in accessing resources from anywhere and at any time, increases participants' independent learning skills, etc.).	Alraimi, Zo & Ciganek (2015); Wu & Chen (2017) **The examples used in this item were self-developed**.
	PU5	Using Rwaq helps in increasing the amount of knowledge or skills obtained.	Self-developed
	PU6	Using Rwaq assists me in developing my knowledge or skills in the field of academic study or career.	Self-developed
	PU7	In general, the use of Rwaq contributes to the achievement of my educational objectives (e.g. developing a specific skill for a particular purpose).	Self-developed
Perceived Ease of Use	PEU1	Learning how to use the Rwaq platform was easy for me.	Gao & Yang (2015); Wu & Chen (2017)
	PEU2	It is easy for me to become skilful in using Rwaq (e.g. accessing the desired information on the platform quickly and easily).	Gao & Yang (2015); Wu & Chen (2017) **The example used in this item was self-developed.**
	PEU3	Using Rwaq and the interaction with it is clear and understandable.	Gao & Yang (2015); Wu & Chen (2017)
	PEU4	The use of Rwaq does not require a lot of mental effort.	Yang, Shao, Liu & Liu (2017)
	PEU5	In general, I find Rwaq easy to use.	Gao & Yang (2015); Yang, Shao, Liu & Liu (2017)
Arabic Language Support	ALS1	Compared to the English language supported by the foreign educational platforms, Rwaq courses provided in the Arabic language are easier to understand and learn.	Self-developed
	ALS2	Compared to the English language supported by the foreign educational platforms, Rwaq courses provided in the Arabic language make me achieve a better and deeper understanding of the contents of the course.	Self-developed
	ALS3	Compared to the English language	Self-developed

		supported by the foreign educational platforms, communicating with teachers and learners in Rwaq using the Arabic language is better for me.	
	ALS4	I will face language problems when using an educational platform that does not support my Arabic language.	Alkharang (2014)
	ALS5	Compared to the educational platforms providing courses in English, platforms such as Rwaq that support the Arabic language are better for learning Islamic and Arabic subjects.	Self-developed
	ALS6	The Arabic platforms such as Rwaq are an opportunity to enrich and enhance the Arabic content on the Internet (e.g. Rwaq helps to increase the number of the Internet sources of information in Arabic).	Self-developed
	ALS7	In general, I find the platforms provided in the Arabic language like Rwaq to be an advantage for those interested in learning.	Self-developed
Free Courses' Advantages	FCA1	Joining the free courses provided by Rwaq helps me to save money.	Self-developed
	FCA2	When I want to develop my knowledge, I look for free courses to join.	Self-developed
	FCA3	The free courses offered by Rwaq encourage me to join the Rwaq platform.	Self-developed
	FCA4	I can join as many courses as I need in Rwaq because the courses are free.	Self-developed
	FCA5	Free Rwaq courses help those with poor financial status to develop their knowledge.	Self-developed
	FCA6	Free Rwaq courses are useful to me if I am not sure of my commitment to complete the courses.	Self-developed
	FCA7	In general, I think that the free courses in Rwaq are useful to me.	Self-developed
Perceived Reputation	PR1	I trust that the instructors who teach courses in Rwaq have a scientific efficiency and extensive experience.	Schwaiger (2004)
	PR2	I think that Rwaq is a unique educational platform in the Arab world.	Schwaiger (2004)
	PR3	I think that the Rwaq platform provides courses with reliable scientific information.	Self-developed
	PR4	I think that the Rwaq platform offers courses of excellent quality.	Feldman, Bahamonde & Velasquez Bellido (2014)
	PR5	I trust the Rwaq platform and the services it provides.	Foroudi, Melewar & Gupta (2014)
	PR6	I have a positive feeling about the Rwaq platform (e.g. respect or admiration).	Feldman, Bahamonde & Velasquez Bellido (2014)
	PR7	In my opinion, Rwaq is interested in communicating with the users regarding	Schwaiger (2004)

		their problems or needs.	
	PR8	In general, I think that the Rwaq platform has a good reputation.	Self-developed
Intrinsic Motivations	IM1	I enjoy learning new topics in Rwaq.	Jha & Bhattacharyya (2013)
	IM2	I enjoy viewing diverse topics in Rwaq.	Jha & Bhattacharyya (2013)
	IM3	I find it fun to learn in Rwaq.	Jha & Bhattacharyya (2013)
	IM4	I get intrinsically motivated to constantly expand my knowledge using Rwaq.	Jha & Bhattacharyya (2013)
	IM5	Using Rwaq satisfies my curiosity to explore interesting topics.	Self-developed
	IM6	In Rwaq, I have the curiosity to explore topics in disciplines that have nothing to do with my academic specialization.	Self-developed
	IM7	I think that using Rwaq is interesting for me.	Self-developed
Willingness to Earn a Certificate	WEC1	In Rwaq, the courses that offer a certificate of course completion upon meeting the requirements encourage me to join that course.	Self-developed
	WEC2	Obtaining a certificate of course completion from Rwaq enhances and supports my resume.	Self-developed
	WEC3	Obtaining a certificate of course completion from Rwaq may help me in order to differentiate myself in the workplace, apply for a job, compete in a competition, etc.	Self-developed
	WEC4	Obtaining a certificate of course completion from Rwaq is a proof to others that I have knowledge in a given subject (e.g. proof to my employer, university teachers, etc.).	Self-developed
	WEC5	Obtaining a certificate of course completion from Rwaq motivates me to commit to complete the course.	Self-developed
	WEC6	Obtaining a certificate of course completion from Rwaq gives me a positive feeling (e.g. a sense of accomplishment, a sense of appreciation for my efforts in the course, etc.).	Self-developed
	WEC7	Obtaining a certificate of course completion from Rwaq gives others an impression that I am an educated person and a seeker of knowledge.	Self-developed
	WEC8	In general, obtaining a certificate of course completion from Rwaq helps me to achieve my goals.	Self-developed
Social Influence	SI1	People who influence my behaviour encourage me to use Rwaq (e.g. friends, co-workers, teachers, relatives, my employer, etc.).	Wu & Chen (2017)

	SI2	People who are important to me advise me to use Rwaq (e.g. friends, coworkers, teachers, relatives, my employer, etc.).	Zhou (2016)
	SI3	People whose opinions I respect and value think that it is better for me to use Rwaq (e.g. friends, co-workers, teachers, relatives, my employer, etc.).	Zhou (2016)
	SI4	In the social networking accounts of Rwaq, such as Twitter and Facebook, the views of people who have used Rwaq for learning and who have held a positive stance about the platform have encouraged me to utilise it.	Self-developed
Continuance Intention	CI1	I intend to continue to use Rwaq in the future.	Yang, Shao, Liu & Liu (2017)
	CI2	I predict I would continue to use Rwaq in the future.	Chang, Liu & Chen (2014)
	CI3	I plan to continue to use Rwaq in the future.	Chang, Liu & Chen (2014); Yang, Shao, Liu & Liu (2017)