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Social Media Adoption Among University Instructors In Saudi Arabia

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SOCIAL MEDIA ADOPTION AMONG UNIVERSITY INSTRUCTORS IN SAUDI ARABIA

by

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Approved By:

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Advisor Date

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DEDCATION

This work is dedicated:

To my parents Muna Alhaqbani and Abdulaziz Alasfor, who dedicated their lives and sacrificed their comfort for making a better and comfort life for me, my brothers and sisters.

To my wife Najd Alsehaim, who left her family to support me during my study journey at the United States of America.

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To my brothers and sisters, who made me feel home with their calls. I am sorry for missing your weddings and happy moments.

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CHAPTER 1 PROBLEM STATEMENT

Introduction

Social media is one of the most prominent inventions of the twenty-first century. Social Media is defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan and Heinlein, 2010, p.61). There are many social media applications that have become a part of daily life including YouTube, WhatsApp, Facebook, Instagram, Twitter, Snapchat, LinkedIn, and Wikipedia. Internet and mobile devices have fostered the prevalence of social media use anytime and anywhere.

Although most of the inventions were designed for different purposes, educators have begun to harness these inventions for educational purposes. In the past, educators used silent films, sound films, audio recordings, radios, televisions, computers, and the Internet. The use of these inventions contributed to the improvement of teaching and learning (Januszewski & Molenda, 2008). Today, many educators use social media for educational purposes.

Studies have proven the significance of integrating social media for facilitating teaching and learning in higher education (Lo, 2013; Ebner, Lienhardt, Rohs, and Meyer, 2010; Bonk, 2008; Ng'ambi and Lombe, 2012; Lichter, 2012; Laughton, 2011). Moreover, social media can provide an opportunity for students to acquire the skills of communication (Harrison, 2011), collaboration (Zgheib, 2014), critical thinking (Chayko, 2008), creativity (Bussert, Brown, and Armstrong, 2008), and life-long learning (Collins and Halverson, 2009). In 2013, 41% of university faculty members in the United States used social media for teaching purposes with 10% growth since 2012 (Seaman and Tinti-Kane, 2013).

Statement of the Problem

There is an orientation from the government of Saudi Arabia toward social media in general. The Saudi government is working to employ social media to improve the services provided for citizens and residents. Almost all governmental organizations and educational institutions have social media accounts. Some of them have an account in at least one social media application while others have an account in different social media applications.

The government of Saudi Arabia considers the significance of social media in educating the Saudi community. The deputy crown prince of Saudi Arabia through the Misk Foundation charity convenes *Shoof* (or "see" in English) an annual conference that supports and rewards the Saudi youth's use of visual social media in improving their community and country (shoof.misk.org.sa). *Ftn* (or "clever" in English) is a national program supervised by the Ministry of Education and a group of Saudi ministries and universities that aims at preventing the community from security, social, cultural, health and economic threats through social media (ftnmoe.com).

The Ministry of Education founded the National Center for E-Learning and Distance Learning (NCeL) because it considered the importance and benefit of e-learning and distance learning for higher education (he.moe.gov.sa). NCeL supports and rewards university instructors to integrate social media in the learning process (award.elc.edu.sa). Moreover, Saudi students indicated positive attitudes toward social media in their learning and prefer attending classes that university instructors use social media (Aifan, 2015). However, the adoption of social media for teaching students by university instructors in Saudi Arabia is unclear.

The Diffusion of Innovation Theory is one of the most popular theories in investigating the adoption of innovation. "Rogers' Diffusion of Innovations Theory is the most appropriate for investigating the adoption of technology in higher education" (Sahin, 2006, P. 1). The data

collected from using this theory should reveal potential current factors that influence the intent to adopt educational integration of social media by university instructors in Saudi Arabia. This theory explains the success or failure of innovation adoption. It asserts an understanding of an individual's perceptions of an innovation. These perceptions influence on individuals decision whether to adopt or reject the innovation (Rogers, 2003).

The innovation-decision process consists of five stages: (a) knowledge—when an individual knows about the existence of the innovation and understands how it functions, (b) persuasion—when the individual develops a positive or negative attitude towards the innovation, (c) decision—the activity that leads the individual to adopt or reject the innovation, (d) implementation—when the individual uses an innovation, and (e) confirmation—the individual's feedback based on his or her experience of using an innovation which can lead to confirm or reverse the innovation decision. In these stages, the individual reduces his/her uncertainty about an innovation by seeking and processing information about the pros and cons of the innovation (Rogers, 2003).

According to Rogers (2003), there are five attributes of innovations that influence the adoption and diffusion of innovations: (a) relative advantage: "the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 2003, P.229), (b) compatibility: "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (Rogers, 2003, P.240), (c) complexity: "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 2003, P.257), (d) trialability: "the degree to which an innovation may be experimented with on a limited basis" (Rogers, 2003, P.258), (e) observability: "the degree to which the results of an innovation are visible to others" (Rogers, 2003, P.258).

Purpose and Research Questions

This study aimed to investigate the adoption of social media in teaching students by university instructors in Saudi Arabia. This study was guided by three questions:

Q 1. At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students?

Q 2. What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of using social media in teaching students?

Q 3. What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of using social media in teaching students?

Theoretical Framework

The Diffusion of Innovation Theory is one of the most popular theories in investigating the adoption of innovation. "Rogers' Diffusion of Innovations Theory is the most appropriate for investigating the adoption of technology in higher education" (Sahin, 2006, P. 1). The data collected from using this theory should reveal current potential factors that influence the intent to adopt educational integration of social media by university instructors in Saudi Arabia. This theory explains the success or failure of innovation adoption. It asserts an understanding of individuals' perceptions of an innovation (Rogers, 2003). Roger (2003) defined adoption as "a decision to make full use of an innovation as the best course of action available", and rejection as "a decision not to adopt an innovation" (P.177). Diffusion is "the process in which an innovation is communicated thorough certain channels over time among the members of a social system" (Rogers, 2003, P. 5)

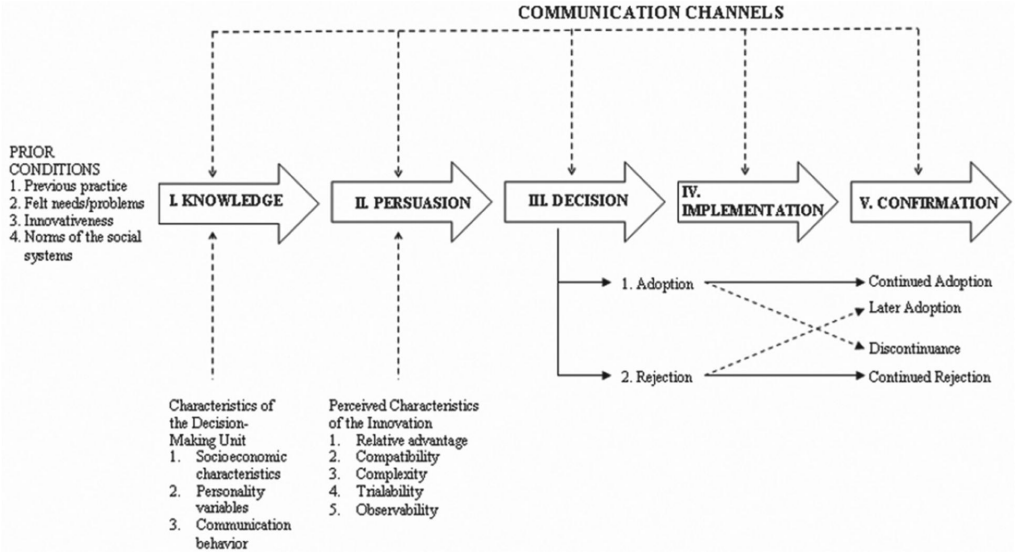
The definition of diffusion contains the four main elements: Innovation, Communication Channels, Time, and Social System. Rogers defined an innovation as "an idea, practice, or

project that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). It does not matter when an innovation is invented in order to be considered a new innovation as long as it is new for the individual. The diffusion occurs when an individual that has the knowledge about the innovation communicates with another individual that does not have the knowledge through communication channels or means. Mass media channels could reach large numbers of audiences while interpersonal channels could be more effective in convincing individuals to adopt the innovation especially when they are similar in their education, socioeconomic status, or other important ways. Time is the duration required for an individual to go through the innovation-decision process. Some individuals require more time than others in adopting innovations (Rogers, 2003). Social System is "a set of interrelated units engaged in joint problem solving to accomplish a common goal" (Rogers, 2003, P. 23). The social structure of the social system can affect the diffusion and adoption of innovation and individual innovativeness (Rogers, 2003).

The Innovation-Decision Process

According to Rogers (2003), "an individual's decision about an innovation is not an instantaneous act. Rather, it is a process that occurs over time and consists of a series of different actions" (P. 169). The innovation-decision process consists of five stages: a) Knowledge, b) Persuasion, c) Decision, d) Implementation, and e) Confirmation (Figure 1). In these stages, the individual reduces his/her uncertainty about an innovation by seeking and processing information about the pros and cons of an innovation (Rogers, 2003).

Figure 1. *The Innovation-Decision Process*



(Rogers, 2003, P.170).

According to Rogers (2003), Knowledge is the stage where an individual knows about the existence of the innovation and understands how it functions. Individuals expose ideas that fit with their needs, interests, and existing attitudes and avoid ideas that do not fit with their predispositions (*selective exposure*). If it fits, this exposure will have effect. The need for an innovation may precede knowledge about it as well as knowledge about an innovation may create a need. Knowing about an innovation does not necessarily mean adopting it. There are three types of knowledge: a) knowing about the existence of the innovation (*awareness-knowledge*); b) knowing information about the proper use of an innovation (*how-to-knowledge*); c) (*Principle knowledge*) knowing about "information dealing with the functioning principles underlying how innovation works" (Rogers, 2003, P.173). The lack or incompletion of one or all of these types may end the rejection or discontinuous of an innovation (Rogers, 2003).

The second stage is Persuasion that comes after the Knowledge stage. Rogers (2003) describes this stage as the stage in which an individual develops a positive or negative attitude toward the innovation. Whereas the knowledge stage is about knowing about an innovation, the persuasion stage is about the feelings about an innovation. Individuals form their attitude toward

the innovation after knowing about it. Individuals interpret information based on their existing attitudes and beliefs (*selective perception*). "Perceived attributes of an innovation as it relative advantage, compatibility, and complexity are especially important as this stage" (Rogers, 2003, P.175). This stage involves forward planning and anticipating the future of an innovation prior to deciding whether or not to try it. To reduce uncertainty, individuals may evaluate their information about the innovation by asking their peers since they are more convincing and accessible to them. Their peers answer their questions based on their subjective opinions. Individuals sometimes adopt innovations in order to prevent the occurrence of a future unwanted event (*preventive innovation*). This type of adoption is slow and weak compared to a non-preventive innovation (Rogers, 2003). "The information of a favorable or unfavorable attitude toward innovation does not always lead directly or indirectly to an adoption or rejection decision" (Rogers, 2003, P.176).

According to Rogers (2003), the Decision stage is the stage in which an individual "engages in activities that lead to a choice to adopt or reject an innovation" (P. 177). To speed up the adoption rate, change agents provide partial trial and demonstrations for individuals. The partial trial is significant in reducing individuals' uncertainty of an innovation's consequences because it determines the usefulness of the innovation in their situation. Trial of innovations by peers may substitute individuals' trials for some innovations and for some individuals. Demonstrating new innovations in a social system is effective in speeding up the adoption process, especially when the demonstration is made by an opinion leader. The rejection of an innovation may occur in two forms: a) a rejection after considering and trying out the innovation (*active rejection*) and b) a rejection without considering and trying out the innovation (*passive rejection*). This means that rejection can occur in any stage and even by discontinuing the

innovation after adopting it. This may be attributed to the pro-innovation bias (Rogers, 2003). Rogers defined the pro-innovation bias as "the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected" (Rogers, 2003, P. 106). For some innovations, the sequence of the innovation-decision process may differ depending on the culture settings: It may be a linear sequence of knowledge, persuasion, and decision, a individualistic cultures, such as Indonesia; an sociocultural setting or collectivistic cultures, such as China, the sequence may occur as knowledge, decision, and persuasion because of group pressure in adopting innovations (Rogers, 2003).

The implementation stage starts when an individual uses an innovation (Rogers, 2003). All the previous decision stages are a "strictly mental exercise of thinking and deciding. But implementation involves overt behavior change as the new idea is actually put into practice" (Rogers, 2003, P.179). The how-to-use problems appear in this stage. For typical individuals, the uncertainty about an innovation's consequences continues to exist at implementation even after deciding on adoption (Rogers, 2003). While individuals' intent to seek information about the innovation exists in the decision stage, they make "active information seeking" in the implementation stage (Rogers, 2003, P.179). Change agents should provide technical assistance to individuals at this stage to reduce their uncertainty about the innovation's consequences. The length of the implementation stage depends on the nature of the innovation (Rogers, 2003). This stage ends when the innovation "becomes institutionalized as a regularized part of an adopter's ongoing operations" (Rogers, 2003, P.180). Some innovations may be adapted and customized in the implementation stage by some individuals to fit with their ongoing operations (Rogers, 2003). Rogers calls this *re-invention,* which is "the degree to which an innovation is changed or

modified by a user in the process of its adoption and implementation" (Rogers, 2003, p. 180). Rogers mentioned that the higher degree of re-invention leads to sustainable and fast adoption (Rogers, 2003).

The Confirmation stage is the final stage in the innovation decision process. It is the stage that an individual seeks to strengthen his or her innovation decision that is already made (Rogers, 2003). Individuals may reverse their decision when facing "conflicting messages about the innovation" (Rogers, 2003, p. 189). Rogers mentioned that individuals try to prevent these conflicting messages and look for supportive messages for their decisions. However, some messages lead to questioning the decision of the adoption or rejection. Discontinuous is when the individual decides to reject the innovation after adopting it. There are two types of discontinuous: a) *replacement discontinuous* by rejecting an innovation to adopt a better innovation; b) *disenchantment discontinuous* by rejecting an innovation because of the dissatisfaction of its performance (Rogers, 2003). "The discontinuous of an innovation is one indication that the new idea may not have been fully routinized into the ongoing operation of the adaptor at the implementation stage" (Rogers, 2003, p. 189). The discontinuous rate differs from one innovation to another. Innovations with a higher rate of adoption are less likely to be discontinued than innovations with a lower rate of adoption. Moreover, innovations with high-perceived compatibility and relative advantage are less likely to be discontinued (Rogers, 2003). Rogers indicates, "high discontinuous are characterized by less formal education, lower socioeconomic status, and less change agent contact" (Rogers, 2003, p. 191).

Attributes of Innovations

Rogers (2003) mentioned that there is little research focused on the effect of innovations' attributes on the adoption. This type of research predicts individuals' reactions to an innovation.

“These reactions can be modified by the way in which an innovation is named and positioned, and how it is related to the existing beliefs and past experiences of potential adopters” (Rogers, 2003, P. 219). These attributes reduce individuals’ uncertainty about innovations (Rogers, 2003). Rogers (2003) extends that the perceived attributes of an innovation can predict from 49% to 87% about its adoption. Rogers (2003) defined five attributes of innovations as: a) relative advantage, b) compatibility, c) complexity, d) trialability, e) observability.

Relative advantage is “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 2003, P. 229). Rogers identifies relative advantage among the strongest predictors of the adoption rate of an innovation. Moreover, it is a vital part of information messages that diffuse between peers. Rogers mentioned that relative advantage includes sub-dimensions: rewards immediacy, time and effort saving, low cost, economic profitability, social prestige, and discomfort decreasing. These sub-dimensions may not always have positive relationships with the adoption for all innovations. Monetary and nonmonetary incentives increase the relative advantage of the innovation (Rogers, 2003).

According to Rogers, compatibility is "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 2003, P.240). If an innovation is compatible, it is less uncertain and fits with the individual’s situation. Rogers mentioned that an innovation’s compatibility with sociocultural values and beliefs increases its adoption. Individuals use old innovations to assess a new innovation. Therefore, the more compatible the innovation with old innovations, the more likely it will be adopted. Nevertheless, if it were completely compatible, individuals would not consider it as an innovation. Rogers added that an innovation’s compatibility with upcoming new innovations increases its adoption. Moreover, the rate of adoption increases when the innovation meets

individuals' needs (Rogers, 2003). Sometimes, individuals may not recognize their "need for an innovation until they become aware of the new idea or its consequences" (Rogers, 2003, P.246). Rogers asserts the effect of the innovation name and its meaning on the compatibility of the innovation (Rogers, 2003).

Rogers defined complexity as "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 2003, P.257). Rogers points out that there is a negative relationship between the innovation's complexity and its rate of adoption. In other words, the more complex the innovation is, the less likely it is to be adopted, and vice versa. Complexity may become a barrier for adopting some innovations, especially for later adopters (Rogers, 2003).

Rogers defined trialability as "the degree to which an innovation may be experimented with on a limited basis" (Rogers, 2003, P.258). Rogers indicates that there is a positive relationship between the innovation trialability and its rate of adoption. Innovations that cannot be divided for trial have a slow rate of adoption. Trying out innovations allows individuals to explore how they work and reduce their uncertainty about their consequences. Earlier adopters value trialability more than later adopters (Rogers, 2003). Rogers stated that trialability "may involve re-inventing it so as to customize it more closely to the individual's conditions" (Rogers, 2003, P.258).

According to Rogers, observability is "the degree to which the results of an innovation are visible to others" (Rogers, 2003, P.258). Rogers mentioned that there is a positive relationship between innovations' observability and their adoption. Thus, software technologies have a slow rate of adoption compared to hardware technologies (Rogers, 2003). Utilizing the Diffusion of Innovation Theory helped the researcher in investigating the adoption of social

media among university instructors in Saudi Arabia in their courses. The data collected from using this theory should reveal potential current factors that influence the intent to adopt educational integration of social media by university instructors in Saudi Arabia.

Definitions and Key terms used in the study

Adoption: According to Rogers (2003), adoption is "a decision to make full use of an innovation as the best course of action available" (P.177).

Blog: Schirmer (2011) defined blog as "a personalized website with dated entries presented in reverse chronological order" (P.17).

Compatibility: Rogers (2003) defined compatibility as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (P.240).

Complexity: According to Rogers (2003), complexity is "the degree to which an innovation is perceived as relatively difficult to understand and use" (P.257). However, when the researcher created the instrument used in this study, the items of the complexity were written oppositely based on the degree to which using social media is perceived as relatively easy to understand and use.

Confirmation Stage: Confirmation stage is the stage that an individual seeks to strengthen his or her innovation decision that is already made (Rogers, 2003).

Decision Stage: Rogers (2003) defined decision stage as the stage that an individual "engages in activities that lead to a choice to adopt or reject an innovation" (P. 177).

Diffusion: Rogers (2003) defined diffusion as "the process in which an innovation is communicated thorough certain channels over time among the members of a social system" (P. 5).

Teaching Students: Teaching Students means what instructors do or ask students to do in order to perform learning tasks and achieve course goals.

Implementation Stage: According to Rogers (2003), implementation stage is the stage when an individual uses an innovation.

Innovation: Rogers (2003) defined innovation as "an idea, practice, or project that is perceived as new by an individual or other unit of adoption" (p. 12).

Knowledge Stage: According to Rogers (2003), knowledge stage is the stage where an individual knows about the existence of the innovation and understands how it functions.

Media Sharing: Media sharing are the sites that aim to share photos and videos (Kaplan and Heinlein, 2010) and provide social tagging between users (Zgheib, 2014).

Microblog: Microblogs are similar to blogs, but they are shorter than blogs (Junco, 2014; Schirmer, 2011).

Observability: According to Rogers (2003), observability is "the degree to which the results of an innovation are visible to others" (P.258).

Persuasion Stage: Rogers (2003) defined persuasion stage as the stage that an individual develops a positive or negative attitude toward the innovation.

Podcast: According to Buffington (2010), podcast is "a combination of the words "iPod" and "broadcast," and podcasts emerged from the idea of audio blogging. Podcasts can be audio-only files or can include images or video" (P.12).

Rejection: According to Rogers (2003), rejection is "a decision not to adopt an innovation" (P.177).

Relative Advantage: According to Rogers (2003), relative advantage is "the degree to which an innovation is perceived as being better than the idea it supersedes" (P. 229).

Social Media: Kaplan and Heinlein (2010) defined social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (P.61).

Social Networking Sites: Boyd and Ellison (2008) defined social networking sites as web-based services that offer users the opportunity to create personal profiles that they can share publicly or semi-publicly in order to connect with family, friends, colleagues, and people with the same interests.

Trialability: According to Rogers (2003), trialability is "the degree to which an innovation may be experimented with on a limited basis" (P.258).

Wiki: According Kaplan and Heinlein (2010), wiki is a website where content can be added, edited, or deleted easily by any user. Content can be added by individuals or collaboratively by multiple users.

Summary

This study investigated the social media adoption among university instructors in Saudi Arabia. This study was guided by three questions: (1) At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students, (2) What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of using social media in teaching students, and (3) What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of using social media in teaching students? This study used Rogers' Diffusion of Innovation Theory as a theoretical framework. The research problem, key terms, and definitions of this study were also discussed in this chapter.

CHAPTER 2 LITERATURE REVIEW

Introduction

The literature review helps the researcher to exhibit the worthiness of conducting such research. It helps the researcher in showing the relation between the independent and dependent variables in the study. It supports in discussing the results of the study by confirming the aspects of agreement and disagreement with previous studies (Creswell, 2014).

This study aimed to investigate the adoption of social media for teaching students by university instructors in Saudi Arabia. The literature review in this study covered four main sections. The first section defined social media and illustrated its types. The second section focused on the integration of social media in teaching higher education students. The third section reviewed previous studies about faculty adoption of social media. The last section discussed demographic variables and their impact on social media.

Social Media

Introduction

Web 2.0 is a way of utilizing the World Wide Web that started in 2004. It is a platform where content and applications are created, published, and modified by all users collaboratively in a continuous way. Web 2.0 is considered a platform for social media growth (Kaplan and Heinlein, 2010). This differs from Web 1.0 technologies in that their users are readers only (Dabbagh and Reo, 2011b). Users of social media have more control and input over content compared to previous social technologies (Ertmer et al., 2011).

The use of mobile devices and smartphones increased the adoption of social media (Bannon, 2012). Thus, some social media services were integrated into smartphones and mobile devices. Other social media applications can be downloaded to them. This gives social media the ability to be used anytime and anywhere as long as it is connected to the Internet (Zgheib, 2014).

Definition

Some researchers used the term social media and social networking interchangeably (Johnson and Maddox, 2012) while others classified social networking as one of the social media technologies (Dabbagh and Reo, 2011a; Lenartz, 2013; Kear, 2010). Social media is "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan and Heinlein, 2010, P.61). It emphasizes the social aspect of Internet use (Dabbagh and Reo, 2011a).

There are hundreds of social media sites (Zgheib, 2014). Some of them are open to public while others are closed. Some social media sites are limited to some countries while others are open for the globe. For organizing purposes, further descriptions of social media will be based on the categories of social media: social networking sites, blogs, microblogs, podcasts, wikis, and media sharing.

Social Media Categories

Social Networking Sites

Social networking sites are the highest popularity sites among social media types and younger Internet users (Kaplan and Heinlein, 2010). Social networking sites are web-based services that offer users the opportunity to create personal profiles that they can share publicly or semi-publicly in order to connect with family, friends, colleagues, and people with the same interests (Boyd and Ellison, 2008). "These personal profiles can include any type of information, including photos, video, audio files, and blogs" (Kaplan and Heinlein, 2010, P.63). These profiles help strangers to search and connect with users who have the same interests (Boyd and Ellison, 2008). Examples of social networking are, Facebook, Google+, Ning, MySpace, LinkedIn, and Friendster.

Blogs

A blog is “a personalized website with dated entries presented in reverse chronological order” (Schirmer, 2011, P.17). The user can use blogs to write diaries or to publish articles (Yang and Chang, 2012). Blogs allow users to comment and interact with others and share different media formats and links (Kaplan and Heinlein, 2010). Blogs are free and easy to use (Tindall, 2012). Examples of blogs are Blogger and WordPress.

Microblogs

Microblogs are similar to blogs, but they are shorter than blogs (Junco, 2014; Schirmer, 2011). A microblog is a form of social media that enables users to post and update their status and opinions. These posts can be shared publicly or exclusively with a selected group of people. Each post has a maximum limit of 140 characters. In general, users use microblogs for conversations, discussion, and sharing information and news. The shortness of microblogs posts increased the frequency of updating status in one day instead of one update every few days as with blogs (Java, Song, Finin and Tseng, 2007). Twitter is the most popular microblog site (Schirmer, 2011).

Podcasts

“The term podcast is a combination of the words "iPod" and "broadcast," and podcasts emerged from the idea of audio blogging. Podcasts can be audio-only files, or can include images or video” (Buffington, 2010, P.12). Podcasts can be used on computers or smart devices without any charges. These podcasts can be archived and shared (Schirmer, 2011). Users can subscribe to podcasters to get new episodes once they are published. Users can listen and download the podcast content (Buffington, 2010).

Wikis

Wiki is a Hawaiian word that means quick (Laughton, P. (2011). Wiki is a website where content can be added, edited, or deleted easily by any user. Content can be added by individuals or collaboratively by multiple users (Kaplan and Heinlein, 2010). Wiki is a powerful tool for collaborative purposes in creating and sharing content (Hwang and Brummans, 2011). Some wiki sites, such as Wikispaces and PbWorks allow for public and private sharing (Zgheib, 2014). Other wiki sites like Wikipedia only allow public sharing. Since any user has access to the content, users should be conscious of content validity (Yarrow, 2012).

Media Sharing

Media sharing are sites that aim to share photos and videos (Kaplan and Heinlein, 2010) and provide social tagging between users (Zgheib, 2014). Unlike social networking sites, creating a personal profile page is not required for users of media sharing sites (Kaplan and Heinlein, 2010). Examples of media sharing sites are YouTube, Instagram, Snapchat, Flickr, Pinterest, and Vine.

The Use of Social Media

Social media was created originally for social communications. However, many areas harnessed social media to fulfill their goals. In addition to friends and family social communication, social media have been utilized in business, healthcare, and education.

In healthcare, the use of social media has helped in decreasing patients' uncertainty to health information (Winston, Medlin, and Romaniello, 2012). Health providers use social media to deliver information and programs to the community (Devine, 2015). In business, social media was considered essential in building brands, engaging with consumers, and increasing revenue (Wayland, 2015).

In education, K–12 teachers in the U.S use Wiki as a resource sharing site, for content delivery, students' assignments, and student collaboration (Reich, Murnane, and Willett, 2012). Due to the focus of this study, the next section will review previous studies about the use of social media in higher education.

In summary, social media is "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan and Heinlein, 2010, P.61). Users of social media have more control and input over content and can work collaboratively. Social media can be categorized as social networking sites, blogs, microblogs, podcasts, wikis, and media sharing. Social media has been used in business, healthcare, and education.

Social Media in Higher Education

Social media has been used in higher education for many purposes, including student advising, faculty professional use, and teaching students. This section focused on recent studies that discussed the use of social media in teaching students in higher education. The literature included studies that have used social networking sites, blogs, microblogs, podcasts, wikis, and media sharing. For organizational purposes, the content was divided as follows: faculty and students networking, social media as an alternative for LMS, flexibility of learning, students' motivation, facilitating learning, learning from peers, perceptions toward social media, and students' adoption of social media.

Faculty and Students Networking

Some studies investigated faculty use of social media for posting notifications in their courses. Four instructors and 253 students participated in a study conducted at Griffith University by Irwin, Ball, Desbrow, and Leveritt, (2012). Using Facebook pages, instructors

posted notifications 3-5 times a week about changes to lecture times and locations, available course material, and reminders for assessments. Students assumed their experience would be better if it was a Facebook group instead of a Facebook page. Despite that, the majority of students recommended it for future courses. After having bad experience with LMS, Sim, Naidu, and Apparasamy (2014) recommended the use of a Facebook group in posting notification for students about test or assignment deadlines.

The effectiveness of social media in providing course content has been proven in some studies. Faculty and students showed positive attitudes toward using Facebook in sharing interesting media and articles, or topics to be discussed amongst students (Irwin, Ball, Desbrow, and Leveritt, 2012; Sim, Naidu, and Apparasamy, 2014). Burke, Snyder and Rager (2009) conducted a study about faculty use of YouTube as teaching recourses. Faculty members were satisfied with it and found it an effective tool for teaching and learning. Moreover, online surveys revealed an interest to use YouTube in teaching from faculty who did not use it. Twitter as well can be used for sharing information or for communication between students themselves and their instructors (Ebner, Lienhardt, Rohs, and Meyer, 2010).

The efficacy of student-to-student and instructor-to-student interactions through social media were tested in some studies. Kassens-Noor (2012) conducted a study about using Twitter outside of the classroom in interacting with peers informally to facilitate the in-class learning process. It was effective in creating and applying ideas due to its 24/7 communication feature. Facebook was an effective tool for increasing students and instructors' interactions (Irwin, Ball, Desbrow, and Leveritt, 2012; Sim, Naidu, and Apparasamy, 2014; Imlawi, Gregg, and Karimi, 2015). In the pre-semester questionnaire, 78% of the students studied anticipated that a Facebook page would increase student and instructor interaction. The percentage dropped to only 51% in

the post- semester questionnaire (Irwin, Ball, Desbrow, and Leveritt, 2012). In a more detailed study, Imlawi, Gregg, and Karimi (2015) conducted an experimental study that lasted for an entire semester using a Facebook group page for an Information Systems introductory course. In the control group, instructor's posts were related to the university and course only. In the test group, instructors posted about their experiences that were related to the course content, humor posts, and university and course posts. Although student participation in the Facebook group was not required by both groups, the study revealed that instructor use of humor, and instructor credibility increased students' engagement which was measured by the number of comments and likes. Researchers concluded that social network sites were effective in increasing students' engagement when they were used appropriately.

Social Media as an Alternative for LMS

After the failure of the Learning Management System (LMS) in class engagement between instructors and students, Sim, Naidu, and Apparasamy (2014) conducted a case study at a private university in Malaysia about the use of Facebook as a substitution channel. Results revealed positive feedback from students and instructors and Facebook encouraged their class participation and interest toward subject content. Similarly, students liked the ease of Facebook accessibility and the content delivery flexibility compared to LMSs (Irwin, Ball, Desbrow, and Leveritt, 2012).

Not only was Facebook researched, but also a study was conducted substituting wiki instead of LMS. Laughton (2011) compared the use of wiki to Blackboard focusing on interaction/collaboration, accessibility, ease of use, feature usage, and perceived value. 212 students from the University of Johannesburg completed the survey. The findings suggested that wiki could be a useful alternative to Blackboard. Wiki was considered as easy to use and free,

which made it more accessible. It encouraged students to participate in online discussions that supported learning from peers. Wiki and Blackboard were similar in terms of perceived value and contribution to understanding. However, wiki did not have the same utilities and features that Blackboard had which the researcher considered as a limitation for this research.

Flexibility of Learning

Ebner, Lienhardt, Rohs, and Meyer (2010) conducted a study that aimed to experiment with microbloging in facilitating informal process-oriented learning in higher education. The researchers observed and analyzed microbloging activities of 34 students for six weeks. They concluded that microbloging facilitated informal process-oriented learning in higher education and overcame time and place restrictions. Ng'ambi and Lombe (2012) suggested using podcasts in an environment that provides learners with control, reflection, self-paced learning, and flexibility. Holbrook and Dupont (2011) studied podcast importance in students' decisions to miss classes. Students from introductory and advance courses participated in this study. Results from an online questionnaire showed 50 % of the students expressed the influence of their decisions on missing classes, especially introductory course students.

Students Motivation

Microblogs allowed instructors and other students to give rapid feedback on students' thoughts to enhance their motivation to learn (Ebner, Lienhardt, Rohs, and Meyer, 2010). Some studies found that engaging students through Facebook encouraged their motivation and interest toward subject content (Imlawi, Gregg, and Karimi, 2015; Sim, Naidu, and Apparasamy, 2014). Blogs had positive motivation from students to learn from their peers' posts (Yang and Chang, 2012). Some students do not have interest toward some subjects. Lichter (2012) conducted a case study that measured the influence of YouTube on video assignments on students' interest in an

introductory chemistry class. The researcher stated that these videos promoted students' interest in chemistry class.

Facilitating Learning

The effectiveness of social media in facilitating learning depends on the selection and proper use of social media based on pedagogical and environmental factors (Zgheib, 2014; Imlawi, Gregg, and Karimi, 2015; Ng'ambi and Lombe, 2012; Kassens-Noor, 2012; Irwin, Ball, Desbrow, and Leveritt, 2012). The use of microbloging in facilitating informal process-oriented learning helped students in getting deep understanding of the content (Ebner, Lienhardt, Rohs, and Meyer, 2010). Lichter (2012) measured the influence of a YouTube video assignment on students performance. Students had the option of creating videos, watching them, doing both, or nothing from the previous options. Findings showed students who created videos performed better than who only watched the videos; students who watched videos performed better than those who did not watch the videos. These videos became learning aids for students who created the videos, students who watched them, and anyone who watched them on YouTube.

Previous literature has showed effectiveness of social media in promoting reflective learning. With deep investigation into the effectiveness of blogs in facilitating learning, Halic, Lee, Paulus, and Spence (2010) surveyed 67 undergraduate students about their perceptions and experiences of using blog conversations to promote reflective learning. Results indicated a positive experience from the majority of students reflecting about course concepts outside the classroom and that the blog enhanced their learning. Although they didn't value their peers' comments, they mentioned that blog conversations facilitated knowledge sharing among peers. Ng'ambi and Lombe (2012) investigated the use of podcasts to enhance student learning within a

reflective learning approach. Findings revealed that the use of podcasts encouraged knowledge construction and critical learning.

Some studies did not show any influence in using social media in facilitating learning. Although Twitter provided notable advantages in linear applicative learning compared to traditional teaching methods, it was not appropriate for fostering self-reflective and in-depth thinking among the students because of the 140 character limit (Kassens-Noor, 2012). In another study, Papastergiou, Gerodimos, and Antoniou (2011) explored the effectiveness of utilizing multimedia blogging in a Physical Education undergraduate course to increase knowledge acquisition and self-efficacy in Information and Communication Technologies. With the same learning objectives and content, 70 male and female students were assigned to two groups: (a) students using a Blogger site and (b) students using a multimedia website without the blogging feature. Both groups were asked to create multimedia posts on four specific basketball skills and received comments from their peers, instructors, and an external expert. After comparing the two groups, results exhibited a positive impact on group A students' information and communication technologies and self-efficacy. There was no significant difference between the two groups in regard to knowledge acquisition of the basketball skills. The researchers attributed this to embedding the blogging assignments into the Information and Communication Technologies course instead of the basketball course. Students were focusing on technical exigencies rather than basketball skills.

Learning From Peers

Yang, and Chang (2012) investigated the impact of blog comments and reading others' blogs on students' attitudes toward peer learning, online peer interaction, and motivation to learn from peers. Researchers chose Blogger because college students in Taiwan preferred to study

alone and were hesitant to raise questions in the classroom as they described. Students created their own Bloggers accounts and were required to post essays after each face-to-face class meeting. 154 graduate and undergraduate students from two courses participated in this quasi-experiment that continued for two semesters. Students exhibited a positive motivation to learn from their peers, and positive attitudes were shown toward online peer interaction. In another study, wiki exceeded the LMS in encouraging students to participate in online discussions that support learning from peers (Laughton, 2011). Irwin, Ball, Desbrow, and Leveritt (2012) believed that Facebook enhanced cooperative and collaborative learning when used appropriately through integrating is as a tool into curriculum design.

Perceptions Toward Social Media

Different social media types were perceived as accessible and easy to use (Papastergiou, Gerodimos, and Antoniou, 2011; Ng'ambi and Lombe, 2012; Laughton, 2011). The use of podcast for learning music and visual art in higher education was investigated by Tam (2012). Results showed the usefulness of using podcast to support the face-to-face teaching from the students' perspectives. Students suggest integrating podcasts as extension of lesson learning activities, follow-up discussions, or completion of assessment-related tasks instead of converting lecture content to podcasts. Ertmer, Newby, Liu, Tomory, Yu, and Lee (2011) conducted a study aimed to examine changes in students' perceived value and confidence after participating in creating a wiki chapter internationally. 346 students from Australia, Singapore, China, and Taiwan participated in this study. Post-survey and focus group interviews revealed an increase in students' perceived value and confidence.

Adoption of Social Media

There is a lack of studies focusing on social media adoption. Most studies focused on the benefits of social networking in learning while few of them discussed its adoption in learning (Wong, Tan, Loke, and Ooi, 2015). From the factors influencing the adoption, the trialability and compatibility of social networking sites had a positive effect on students' attitude towards using it while observability, relative advantage, and complexity did not have a positive effect on their attitude. The study concluded that student attitudes towards social networking sites had a positive effect on their intention to use the site in their learning in Nigeria (Folorunso, Vincent, Adekoya, and Ogunde, 2010). Some researchers investigated factors influencing students' adoption of social media for learning in countries similar to Saudi Arabia in terms of culture. For example, in Bahrain, perceived ease and perceived usefulness were vital factors for predicting students' behavioral intention to use social networks (Al-Ammary, Al-Sherooqi, and Al-Sherooqi, 2014).

In Saudi Arabia, Aifan (2015) found "Five predictors were significant determinants of attitudes of the students including: perceived ease of use, perceived usefulness, subjective norms, experience with Skype, and age" (P.iii). Significant positive relationships were found between students' attitudes and their intentions to use social media. There were no significant differences in male and female students' attitudes toward using social media, but the significantce of gender differences existed as barriers when intending to use social media to support learning (Aifan, 2015)

In summary, this section reviewed previous studies about the use of social media in higher education. Social networking sites, blogs, microblogs, podcasts, wikis, and media sharing played a major influence in supporting higher education. Factors influencing students' adoption of social media were not the same in Nigeria and Gulf Cooperation Council countries. Saudi

Arabia and Bahrain shared the factors of perceived usefulness and ease. This section only presented studies about students' adoption of social media. For the study's purpose, the next section is specified for studies about faculty adoption of social media in teaching students and demographic factors that may influence the adoption.

Faculty Adoption of Social Media

There is a lack of research focusing on faculty adoption of social media in teaching in Saudi Arabia. Most studies focused on the benefits of social networking in learning while few discussed its adoption in learning (Wong, Tan, Loke, and Ooi, 2015).

Ajjan and Hartshorne (2008) noticed students have increased their use of wikis, social networks, and blogs while university faculty lack the use of them. Faculty were aware that these tools could help them increase student-faculty and student-student interactions, improve student learning, improve student writing, improve course satisfaction, and ease of integration. However, most of them were not using these tools with their students and did not have plans to use them. Moran, Seaman, and Tinti-Kane (2011) indicated that younger and less experienced faculty perceive social media more useful than older experienced faculty although there was no influence of faculty age and experience on social media awareness.

A strong relationship between age and social media personal use exists where faculty under age 35 reported greater rate of use than those over the age of 35. Interestingly, faculty in middle age (35 to 54) used social media for teaching purposes more than faculty under the age of 35 (Seaman and Tinti-Kane, 2013). Devine (2015) examined nursing faculties' personal and professional social media use. 137 nursing faculty members participated in this descriptive quantitative study. Almost half of the nursing faculty who use social media for personal purposes

incorporated it for professional use making a positive relationship between personal and professional use.

In a study of targeted faculty teaching in U.S. higher education, 80% reported that they integrated social media for some aspects in the courses they were teaching (Moran, Seaman, and Tinti-Kane, 2011). Seaman and Tinti-Kane (2013) mentioned that faculty teaching in the U.S. used social media for personal, professional, and teaching purposes. 41% of them used social media for teaching purposes with 10% growth from the previous year.

Faculty teaching online courses were more likely to use social media than those teaching face-to-face courses (Moran, Seaman, and Tinti-Kane, 2011). Humanities and Arts faculty reported the highest social media teaching usage while Mathematics and Computer Science faculty were the lowest (Seaman and Tinti-Kane, 2013). Devine (2015) stated that social media's "influence on healthcare is apparent evidenced by more than half reported its inclusion in their teaching" (P.129). Faculty did not use social media sites equally (Moran, Seaman, and Tinti-Kane, 2011). They picked social media sites based on their functions; they mostly used Facebook for personal use, LinkedIn for professional use, and blogs and wikis for teaching use (Seaman and Tinti-Kane, 2013).

Elkaseh, Wong and Fung (2016) explored factors influencing university instructors and students' intention to adopt social media for teaching and learning in Libya. Results showed a significance of the factors of perceived usefulness and ease of use in influencing university students and instructors' intention to use social media in higher education. Moreover, there was a positive correlation between students and instructors' daily use with their perceived ease of use and usefulness. Similarly, the factors of perceived ease of use, perceived usefulness, perceived compatibility, faculty self-efficacy, superiors' influence, peer influence, and student influence

were key determinants of faculty intention to use Web 2.0 technologies (Ajjan and Hartshorne, 2008). Devine (2015) confirmed that nursing faculty members perceived social media as priced well, easy to use, pleasurable, and beneficial reported social media intent and actual use. Faculty who used social media for professional use were influenced by people important to them.

Facilitating resource and technology conditions were not significant on influencing faculty intention to use social media in teaching students (Ajjan and Hartshorne, 2008; Devine, 2015) Privacy and integrity were the greatest concerns about social media (Moran, Seaman, and Tinti-Kane, 2011; Devine, 2015). The majority of faculty reported that social media takes more time than its worth (Moran, Seaman, and Tinti-Kane, 2011). In a study that was limited to marketing faculty, Tuten and Marks (2012) reported that faculty lack of social media perceived usefulness in classroom, time, skills of using most of social media, and ease of use were barriers in adopting social media in teaching students.

To increase faculty adoption, Tyagi recommend administrators invest in improving the perceived usefulness, compatibility, self-efficacy, and ease of use of faculty toward the use of social media in higher education. Additionally, Tyagi asserted the need for best practices models of using social media in teaching and learning in higher education to facilitate faculty adoption (Tyagi, 2012). Faculty indicated that financial incentives or career advancements would increase their use of social media in teaching students (Tuten and Marks, 2012). Lei and Morrow (2010) asserted the necessity of providing instructors with monetary and nonmonetary incentives and exemplary models to help them adopt technology integration in general. It is not reasonable to expect instructors to use their own time and resources to learn about new technologies and integrate them.

Cultural differences influence the use and acceptance of social media in education. What influences the acceptance in one culture may not be the same in another. Cultural influences may affect the selection of social media types (Yoo and Huang, 2011). This increases the need to conduct studies about social media adoption for the targeted culture.

Demographic Variables and Social Media

There are some demographic variables that might have an effect on social media adoption. Aifan (2015) recommended for future studies to understand the gender differences influencing social media adoption for King Abdulaziz University's instructors. The following section reviews some demographic variables that might affect social media adoption.

Gender and Social Media

There is a lack of research on faculty gender and its influence on the adoption of social media. Most studies are focused on students. Nevertheless, these studies might be indictors for faculty adoption. Alanazy (2011) investigated "the Saudi student attitude, belief, and preference regarding learning in a coeducation online cooperative learning environment" (p.1). Both genders had a positive attitude toward online cooperative learning with the opposite gender with a significant effect of being married or single on their attitude (Alanazy, 2011). Aifan (2015) found a positive attitude from male and female students toward using social media to support their learning. However, gender differences were perceived as a barrier for Saudi male and female students in using social media for learning purposes. Aifan recommended future research studies focus on gender differences in faculty adoption of social media in teaching.

Huang, Hood, and Yoo (2013) asserted gender differences in the acceptance of Web 2.0 applications for learning in higher education. 432 male and female college students responded to a survey constructed based on Unified Theory for the Acceptance and Use of Technology. They

found that both genders have equal opportunity of Internet access and participation. However, female students' felt more anxious than male students in using blogs, wikis, online games, and immersive virtual environments while the anxiety level was the same in using social networking and online video sharing tools. Thus, the researchers suggested using social networking and online video sharing tools to promote female students use of Web 2.0 applications for learning in higher education. Similarly, Alanazy (2011) found a positive preference of using text-web tools in online cooperative learning with the opposite gender. However, students prefer using voice and video tools in same gender online cooperative learning (Alanazy, 2011).

Ilie, Van Slyke, Green and Hao (2005) found that some perceived innovation characteristics might influence the intention to adopt an innovation for one gender and not the other. According to Devine, faculty age and gender have no influence on performance expectancy, social influence, price value, habit, hedonic motivation, facilitating conditions, expectancy impacting their intent to use social media. (2015)

Regardless of studies that prove or disprove the significance of the gender variable on social media adoption, most of these studies relate to western cultures. The Kingdom of Saudi Arabia is different in terms of religion (Islam), culture, and education system. Islam prohibits the physical studying and teaching of opposite gender (Binbaz.org.sa). Since the Saudi Arabian government applies Islamic laws, public and private universities that belong to the Ministry of Education offer only single-sex education (Alanazy, 2011). Each university has two separate campuses: one for male students and another for female students. Islamic scholars recommend staying away as much as possible from contact with the opposite gender through social media (Alsaleh, 2014).

Age and Social Media

Some studies showed the influence of age on attitudes toward social media in education. 8,016 faculty members participated in Seaman and Tinti-Kane study about the use of social media for teaching and learning. Faculty under age 35 reported a higher rate in social media personal use while faculty in the middle age (35 to 54) were higher in terms of teaching students with social media (Seaman and Tinti-Kane, 2013). Wang, Sandhu, Wittich, Mandrekar, and Beckman (2012) found that younger learners had positive attitudes toward using social media in continuing medical education. Aifan (2015) confirmed that younger students at King Abdulaziz University were more positive than older students toward using social media in facilitating learning.

There is a lack of studies that discuss faculty adoption of social media in teaching students and the influence of their gender and age on the adoption. Faculty indicated they were aware of the benefits of the use of social media in teaching students. Some factors influenced social media adoption while others had no influence. Privacy and time were considered as barriers for the adoption. Best practice models and monetary and nonmonetary incentives were recommended to increase faculty adoption. Previous studies showed the influence of gender and age on attitude toward social media. They showed that gender plays an important role in acceptance and selection of social media. Moreover, Saudi culture may impact adoption of social media and type selection in teaching the opposite gender.

Summary

This study aimed to investigate the adoption of social media for teaching students by university instructors in Saudi Arabia. The literature review in this study covered four main sections. The first section defined social media and illustrated its types. The second section

focused on the integration of social media in teaching higher education students. The third section reviewed previous studies about faculty adoption of social media. The last section discussed demographic variables and their impact on social media. There was a lack of literature of studies that discussed faculty adoption of social media in teaching students and the influence of their gender and age on the adoption. This study aimed to address this gap.

CHAPTER 3 METHODOLOGY

Introduction

This cross-sectional descriptive study used quantitative data collection to answer the research questions:

Q 1. At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students?

Q 2. What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of using social media in teaching students?

Q 3. What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of using social media in teaching students?

This section consists of an overview of research design, population and sampling, instrument, and data analysis.

Research Design

This study was a cross-sectional descriptive study that used survey as a data collection method. It used the Diffusion of Innovation Theory as a theoretical framework and as a guide for building the survey. Morrison recommended using survey to represent a large population in time and with efficiency in time and money (1993). The first research question aimed to identify where the university instructors exist in the diffusion stages. The other questions were based on dependent and independent variables. The dependent variable in this study was the university instructors' intent to use social media in teaching students. The independent variables were perceived relative advantage, perceived computability, perceived complexity, perceived trialability, perceived observability, gender, and age.

Population and Sample

The target population for this study was all university instructors in all Saudi governmental universities. There are twenty-eight governmental universities distributed around the Kingdom of Saudi Arabia (KSA-MOE). According to the statistics center at the Ministry of Education, there are more than 65,000 university instructors in Saudi Arabia. This number reflects professors, associate professors, assistant professors, lecturers, teaching assistants, instructors, and teachers (MOE Statistics Center, 2016). The representative sample for this population is 382 participants (Krejcie, and Morgan, 1970).

Instrument

Survey Development

Since the attributes of the innovation differ from one study to another, Rogers recommends creating new scale items to correspond with the innovation and the target individuals (Rogers, 2003). Therefore, the researcher used Rogers' Diffusion of Innovation Theory as a guide for creating the survey to investigate the adoption of social media among university instructors in Saudi Arabia. The survey was a close-ended survey with one open-ended question. Sapsford (as cited in Cohen, 2000) asserted anonymity and confidentiality of the survey. Therefore, this survey was anonymous to ensure confidentiality. It was in an online format through Wayne State University's survey website (*Qualtrics*). The survey included six parts:

Part One: Demographic Information

This part focused on the demographic information of the university instructors. It was limited to the demographic information that showed some influence on the adoption of social media based on previous literature. This part had close-ended questions that asked the

participants about their gender and age. The data gained from this part was used in answering research question number three.

Part Two: Innovation-Decision Stages

This part answered research question number one. It contained five factors, and each factor was about one stage of the innovation decision (knowledge, persuasion, decision, implementation, and conformation). Each factor had some items that identify a specific stage. This part is built based on Rogers Diffusion of Innovation Theory. This part used a five-point Likert scale as follows: (1) Strongly Disagree, (2) Disagree, (3) Neither Agree nor Disagree, (4) Agree, and (5) Strongly Agree.

Part Three: Current or Past Use

This part identified whether or not a university instructor has used social media in teaching students. If the answer was no, the participant jumped to part four. If the answer was yes, the participant marked the types of social media that he or she has used (social networking sites, blogs, microblogs, podcasts, wikis, and media sharing). This part determined the current percentage of the university instructor users of social media in teaching students and the usage percentage for each social media type.

Part Four: Innovation Perceived Characteristics

This part focused on the perceived characteristics of teaching students with social media. It answered the research question number two. It contained five factors, and each factor is about one characteristic of teaching students with social media (relative advantage, compatibility, complexity, trialability, and observability). This part was built based on Rogers Diffusion of Innovation Theory. It used a five-point Likert scale as follows: (1) Strongly Disagree, (2) Disagree, (3) Neither Agree nor Disagree, (4) Agree, and (5) Strongly Agree.

Rogers defined complexity as "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 2003, P.257). When the researcher created this instrument, the items of the complexity were written oppositely based on the degree to which using social media is perceived as relatively easy to understand and use. In other words, the items of the complexity were written in a way of lack of complexity. Rogers (2003) stated that "new ideas that are simple to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings" (p. 16). When analyzing the results, as a result of this change, the relationship between complexity and adoption is positive instead of negative.

Part Five: Future Intent

This part identified whether or not a university instructor intends to use social media in the future in teaching students. If the answer was no, the participant jumped to part six. If the answer was yes, the participant marked the types of social media that he or she intends to use (social networking sites, blogs, microblogs, podcasts, wikis, and media sharing). This part determined the percentage of university instructor future users of social media in teaching students and the future usage percentage for each social media type.

Part Six: Personal Reasons for Non-Adoption

This part was specified for individuals who choose (in part five) no intent in the future to use social media in teaching students in order to identify their personal reasons. It aimed to get better understanding of the reasons that lead them to this choice.

Survey Translation

Since the target population uses Arabic as the mother language, there was a need to translate the survey from English to Arabic using a forward/backward (translation procedure): A

certified translation office translated the original survey from English to Arabic. Then, another certified translation office translated the Arabic version to English in order to validate the translation of the survey.

Validity and Reliability

To conduct valuable research, the researcher paid attention to instrument's validity and reliability. Cohen defined validity as "a demonstration that a particular instrument in fact measures what it purports to measure" (Cohen, 2000, P.133). The researcher sent the survey to five experts in the Instructional Technology field to ensure validity of the content. Then, the researcher sent it to three Saudi faculty members to ensure face and cultural validity of the Arabic version.

The researcher conducted a pilot study on fifteen university instructors in Saudi Arabia. Cronbach alpha has been used to measure internal consistency of the survey. "The Cronbach alpha provides a coefficient of inter-item correlations, that is, the correlation of each item with the sum of all the other relevant items, and is useful for multi-item scales" (Cohen, 2000, P.148). This step helped the researcher in assuring research validity and reliability. Moreover, it helped the researcher in making the needed changes and reassuring about technical issues.

Data Analysis

This study used descriptive statistics and regression to analyze the collected data (Table 1). The descriptive statistics were used in analyzing question one because they summarize the results in a meaningful way. According to Hosmer, Lemeshow, and Sturdivant (2013), regression methods are recommended when predicting relationship between dependent and independent variables. Logistic regression is appropriate when the dependent variable is binary or dichotomous. Therefore, logistic regression was used to analyze questions two and three. In this

study, the dichotomous dependent variable was university instructors' decision to "use" or "not to use" social media in teaching their students.

Table 1. *Research Questions, Data Sources, Collection Methods, and Data Analysis*

Research Questions	Data Sources	Collection Methods	Data Analysis
Q 1. At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students?	• Instructors	• Survey (part two)	• Descriptive Statistics
Q 2. What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of using social media in teaching students?	• Instructors	• Survey (parts four and five)	• Logistic Regression
Q 3. What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of using social media in teaching students?	• Instructors	Survey (parts one, four and five)	• Logistic Regression

Summary

This study was a cross-sectional descriptive study that used survey as data collection method. It used the Diffusion of Innovation Theory as a theoretical framework and as a guide for building the survey. The target population for this proposed study was all university instructors in all Saudi governmental universities. Regression and descriptive statistics were used to analyze the data in order to investigate the adoption of social media in teaching students by university instructors in Saudi Arabia.

CHAPTER 4 RESULTS

This chapter covers the reliability of the instrument and presents some descriptive statistics about the sample characteristics and participants' responses. Then, it presents the results of this study based on the study questions. Finally, a content analysis for the open-ended analysis is presented at the end of this chapter. Statistical Package for Social Science (SPSS) 23 was used in analyzing the data of this study.

Reliability of Instrument

Cronbach's alpha was used to measure internal consistency of the survey. "The Cronbach alpha provides a coefficient of inter-item correlations, that is, the correlation of each item with the sum of all the other relevant items, and is useful for multi-item scales" (Cohen, 2000, P.148). Gliem, and Gliem (2003) stated that the reliability coefficient of Cronbach's alpha range from 0 to 1. The closer degree of reliability of a scale to 1 makes it more reliable. As presented in Table 2, the Cronbach's alpha for Innovation-Decision Process scale was (.92) while it was (.94) for the perceived characteristics about using social media in teaching students.

Table 2. *Reliability of Instrument*

Scale	No. of Items	Cronbach's Alpha
Innovation-Decision Process	12	.92
Knowledge stage	4	.83
Persuasion stage	2	.78
Decision stage	2	.79
Implementation stage	2	.75
Confirmation stage	2	.84

Perceived characteristics about using social media in teaching students	25	.94
Perceived relative advantage	11	.91
Perceived compatibility	5	.85
Perceived complexity	4	.83
Perceived trialability	2	.52
Perceived observability	3	.84

Sample Characteristics

468 university instructors participated in this study from all of the 28 Saudi public universities. 81 participants were excluded from the data analysis because they did not complete all survey questions. The characteristics of the sample participants' responses in this study covered their age and gender. It also presented some basic results in regard to whether or not participants use social media in teaching students at the current time or in the past, whether or not they intend to use social media in teaching students, what types of social media they use or intend to use in teaching students, and participants' personal perspectives in regard to the use of social media in teaching students.

Age and Gender

As shown in Table 3, 47.5% of the participants were male university instructors while 51.7% were female university instructors. .8% of the participants preferred not to disclose their gender. 47.8% of the participants were 35 years old or below, 29.2% were between 36 to 45 years old, and 17.8% were 46 years old and more. 5.2% of the participants preferred not to disclose their age. It should be noted that the participants aged from 36 to 45 years were combined with the participants aged from 46 years and Older in order to perform the regression analysis for research question three. Thus, their total number was 182 which represents 47%.

Table 3. *Participants' Age and Gender*

Participants' Characteristics	No. of Participants	Percent
Gender		
Male	184	47.5%
Female	200	51.7%
Prefer Not to Answer	3	.8%
Total	387	100%
Age		
35 and below	185	47.8%
36-45	113	29.2%
46 and more	69	17.8%
Prefer Not to Answer	20	5.2%
Total	387	100%

Figure 2. *Participants' Age*

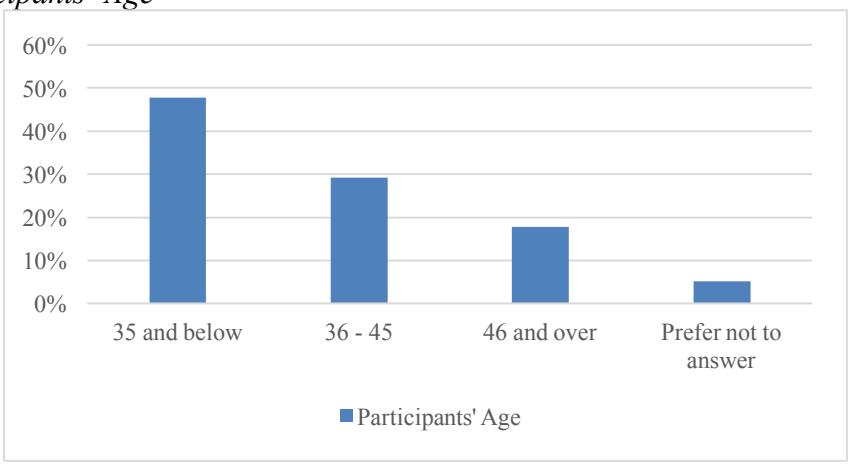
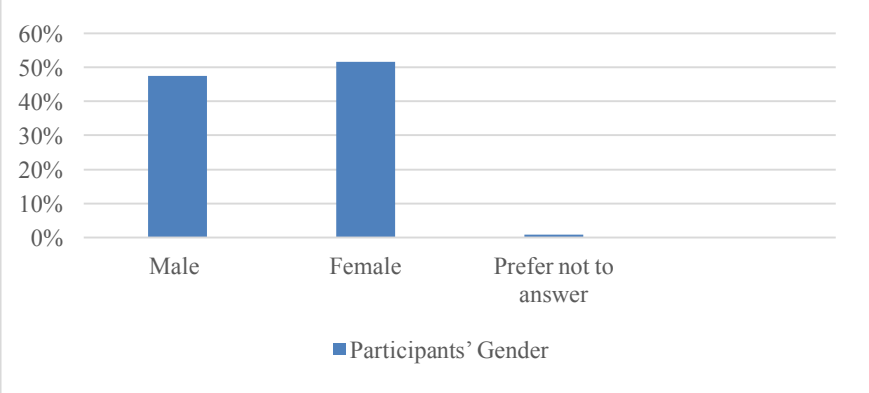


Figure 3. *Participants' Gender*



Current and Past Use

The participants were asked to disclose whether or not they used social media in teaching students at the current time or in the past. As shown in Table 4, 51.2% of the participants used social media in teaching students at the current time or in the past. 48.8% of the participants did not use social media in teaching students at the current time or in the past. Only (198n) participants who reported their use social media in teaching students were asked about the types of social media they used. Table 5 shows that 54.5% of the participants used social networking, 24.2% used Blogs, 32.8% used Wikis, 57.1% used Media sharing, 36.4% used Microblogs, and 10.6% used Podcasts.

Table 4. *Current and Past Use of Social Media in Teaching Students*

Current and Past Use	No. of Participants	Percent
I have used social media in teaching my students?		
Yes	198	51.2%
No	189	48.8%
Total	387	100%

Table 5. *Types of Social Media University Instructors Used in Teaching Students*

Types of Social Media	No. of Participants	Percent
Social networking	108	54.5%
Blogs	48	24.2%
Wikis	65	32.8%
Media sharing	113	57.1%
Microblogs	72	36.4%
Podcasts	21	10.6%

Figure 4. *Current and Past Use of Social Media in Teaching Students*

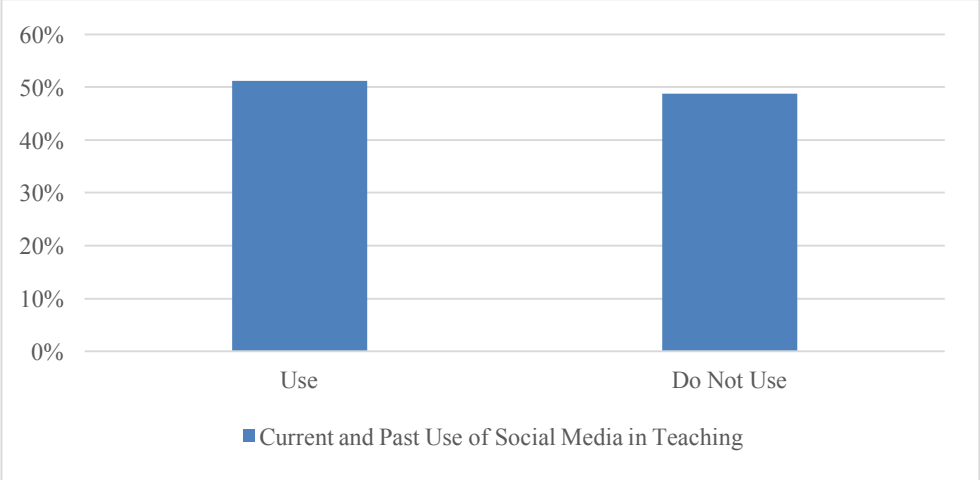


Figure 5. *Types of Social Media University Instructors Used in Teaching Students*

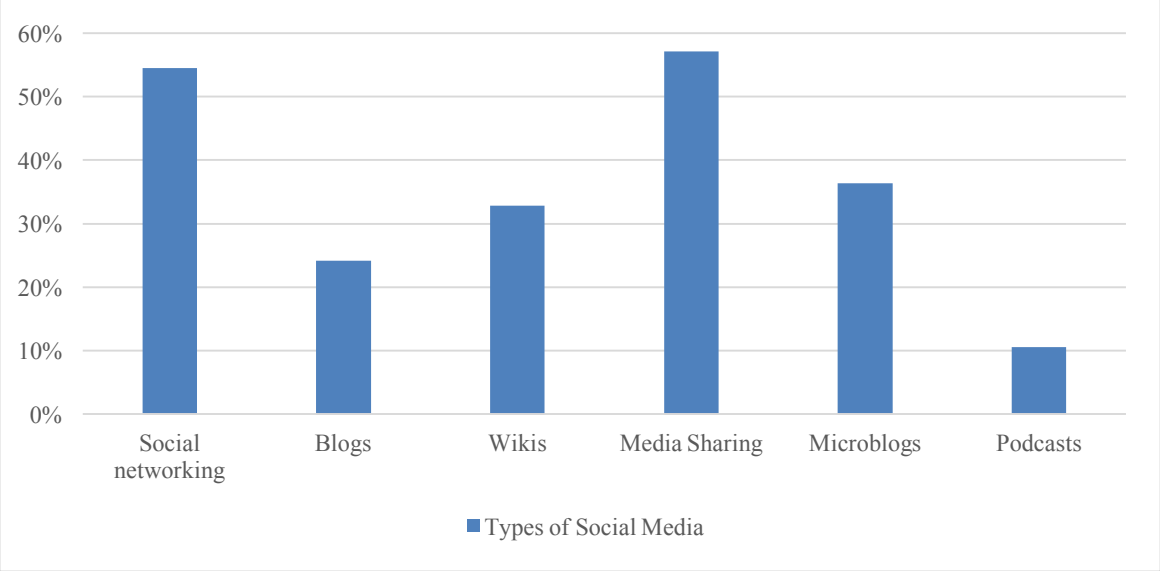


Table 6. *Current and Past Use of Social Media in Teaching Students Based on Gender*

Current and Past Use	Male		Female	
	Number	Percent	Number	Percent
I have used social media in teaching my students?				
Yes	84	45.7%	112	56%
No	100	54.3%	88	44%
Total	184	100%	200	100%

Table 7. *Types of Social Media University Instructors Used in Teaching Students Based on Gender*

Types of Social Media	Male		Female	
	Number	Percent	Number	Percent
Social networking	54	64.2%	53	47.3%
Blogs	15	17.8%	33	29.5%
Wikis	22	26.1%	42	38.4%
Media sharing	46	54.7%	66	58.9%
Microblogs	30	35.7%	42	37.5%
Podcasts	13	15.4%	7	6.3%

In regard to male participants, as shown in Table 6, 45.7% of the male participants used social media in teaching students at the current time or in the past. 54.3% of the male participants did not use social media in teaching students at the current time or in the past. Only (84n) male participants who reported use of social media in teaching students were asked about the types of social media they used. Table 7 shows that 64.2% of the male participants used Social networking, 17.8% used Blogs, 26.1% used Wikis, 54.7% used Media sharing, 35.7% used Microblogs, and 15.4% used Podcasts.

In regard to female participants, as shown in Table 6, 56% of the female participants used social media in teaching students at the current time or in the past. 44% of the female participants

did not use social media in teaching students at the current time or in the past. Only (112n) female participants who reported their use social media in teaching students were asked about the types of social media they used. Table 7 shows that 47.3% of the female participants used Social networking, 29.5% used Blogs, 38.4% used Wikis, 58.9% used Media sharing, 37.5% used Microblogs, and 6.3% used Podcasts.

Figure 6. *Current and Past Use of Social Media in Teaching Students Based on Gender*

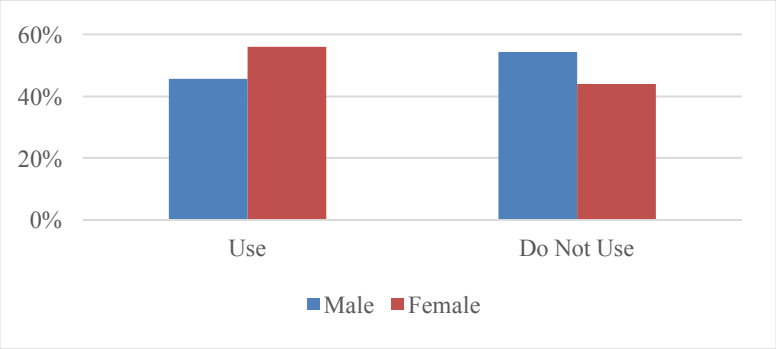


Figure 7. *Types of Social Media University Instructors Used in Teaching Students Based on Gender*

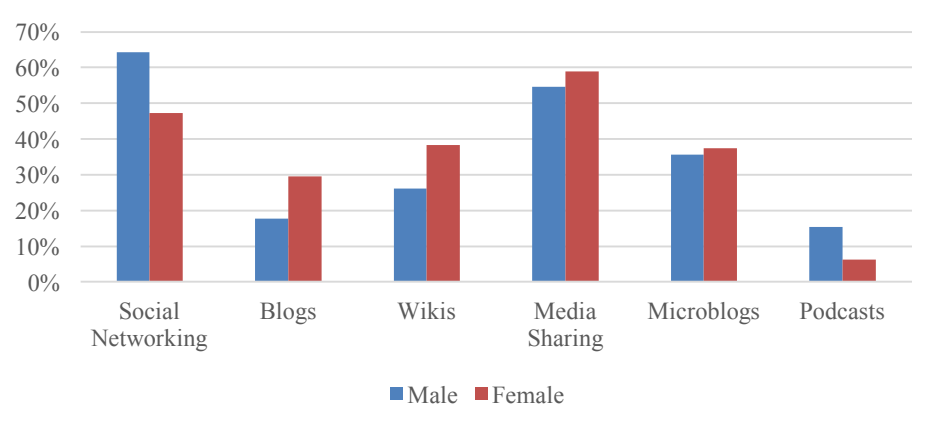


Table 8. *Current and Past Use of Social Media in Teaching Students Based on Age*

Current and Past Use	35 and below		36-45		46 and older	
	No.	%	No.	%	No.	%
I have used social media in teaching my students?						
Yes	84	45.4%	65	57.5%	38	55.1%
No	101	54.6%	48	42.5%	31	44.9%
Total	185	100%	113	100%	69	100%

Table 9. *Types of Social Media University Instructors Used in Teaching Students Based on Age*

Types of Social Media	35 and below		36-45		46 and older	
	No.	%	No.	%	No.	%
Social networking	44	52.4%	37	56.9%	22	57.9%
Blogs	26	31%	28	43.1%	7	18.4%
Wikis	30	35.7%	29	44.6%	12	31.6%
Media sharing	47	56%	42	64.6%	18	47.4%
Microblogs	32	38.1%	32	49.2%	11	28.9%
Podcasts	6	7.1%	19	29.2%	5	13.2%

In regard to participants who were 35 years old or below, as shown in Table 8, 45.4% of them used social media in teaching students at the current time or in the past. 54.6% of them did not use social media in teaching students at the current time or in the past. Only (84n) participants who reported use of social media in teaching students were asked about the types of social media they used. Table 9 shows that 52.4% of the participants who were 35 years old or below used Social networking, 31% used Blogs, 35.7% used Wikis, 56% used Media sharing, 38.1% used Microblogs, and 7.1% used Podcasts.

In regard to participants who were between 36 and 45 years old, as shown in Table 8, 57.5% of them used social media in teaching students at the current time or in the past. 42.5% of them did not use social media in teaching students at the current time or in the past. Only (63n) participants who reported use of social media in teaching students were asked about the types of social media they used. Table 9 shows that 56.9% of the participants who were between 36 and 45 years old used Social networking, 43.1% used Blogs, 44.6% used Wikis, 64.6% used Media sharing, 49.2% used Microblogs, and 29.2% used Podcasts.

In regard to participants who were 46 years old and more, as shown in Table 8, 55.1% of them used social media in teaching students at the current time or in the past. 44.9% of them did

not use social media in teaching students at the current time or in the past. Only (38n) participants who reported use of social media in teaching students were asked about the types of social media they used. Table 9 shows that 57.9% of the participants who were 46 years old and more used Social networking, 18.4% used Blogs, 31.6% used Wikis, 47.4% used Media sharing, 28.9% used Microblogs, and 13.2% used Podcasts.

Figure 8. *Current and Past Use of Social Media in Teaching Students Based on Age*

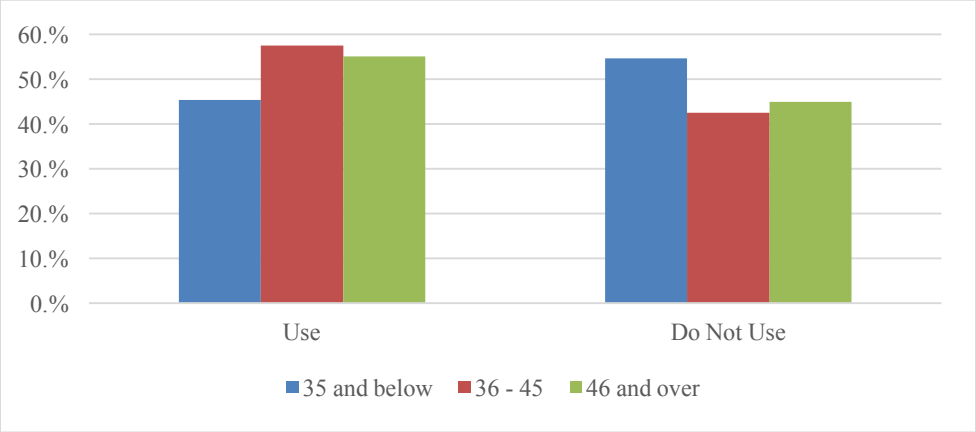
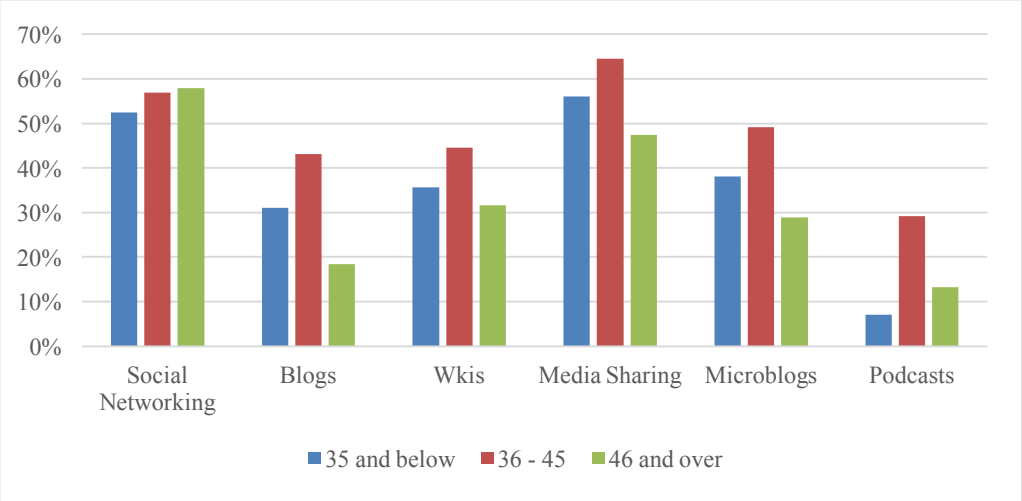


Figure 9. *Types of Social Media University Instructors Used in Teaching Students Based on Age*



Future Intent of Use

The participants were asked to disclose whether or not they intend to use social media in teaching students in the future. As shown in Table 10, 87% of the participants intend to use social media in teaching students in the future. 13% of the participants do not intend to use social

media in teaching students in the future. Only (336n) participants who reported their intent to use social media in teaching students were asked about the types of social media they intend to use. Table 11 shows that 57.1% of the participants intend to use Social networking, 39% intend to use Blogs, 36.9% intend to use Wikis, 66.7% intend to use Media sharing, 52.7% intend to use Microblogs, and 24.7% intend to use Podcasts.

Table 10. *Future Intent of Using Social Media in Teaching Students*

Future Intent of Use	No. of Participants	Percent
I will use social media in the future in teaching my students.		
Yes	336	87%
No	51	13%
Total	387	100%

Table 11. *Types of Social Media University Instructors Intend to Use in Teaching Students*

Types of Social Media	No. of Participants	Percent
Social networking	192	57.1%
Blogs	131	39%
Wikis	124	36.9%
Media sharing	224	66.7%
Microblogs	177	52.7%
Podcasts	83	24.7%

Figure 10. *Future Intent of Using Social Media in Teaching Students*

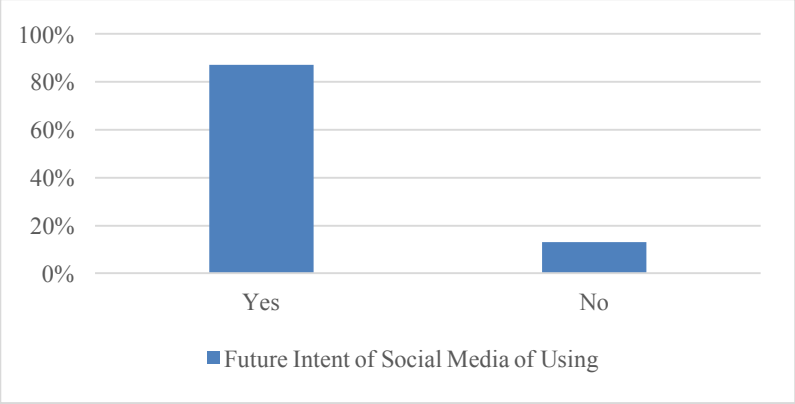


Figure 11. *Types of Social Media University Instructors Intend to Use in Teaching Students*

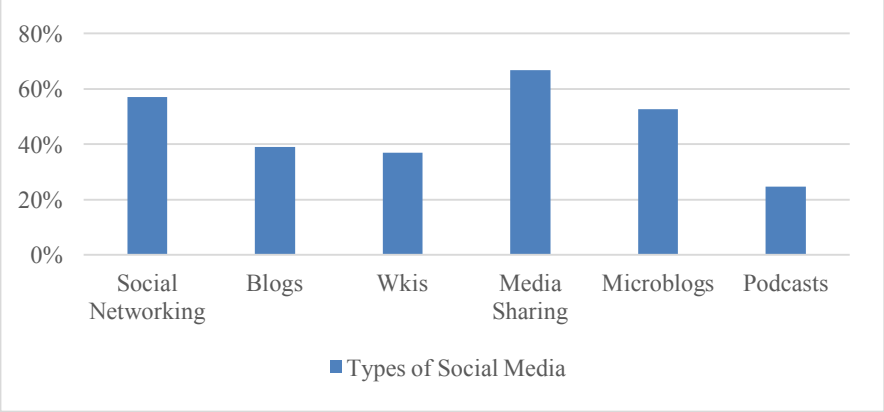


Table 12. *Future Intent of Using Social Media in Teaching Students Based on Gender*

Future Intent of Use	Male		Female	
	Number	Percent	Number	Percent
I will use social media in the future in teaching my students.				
Yes	159	86.4%	175	87.9%
No	25	13.6%	25	12.1%
Total	184	100%	200	100%

Table 13. *Types of Social Media University Instructors Intend to Use in Teaching Students Based on Gender*

Types of Social Media	Male		Female	
	Number	Percent	Number	Percent
Social networking	101	63.5%	90	51.4%
Blogs	53	33.3%	78	44.6%
Wikis	60	37.7%	63	36%
Media sharing	108	67.9%	115	65.7%
Microblogs	83	52.2%	94	53.7%
Podcasts	46	28.9%	36	20.6%

In regard to male participants, as shown in Table 12, 86.4% of the male participants intend to use social media in teaching students in the future. 13.6% of the male participants do

not intend to use social media in teaching students in the future. Only (159n) male participants who reported their intent to use social media in teaching students were asked about the types of social media that they intend to use. Table 13 shows that 63.5% of the male participants intend to use Social networking, 33.3% intend to use Blogs, 37.7% intend to use Wikis, 67.9% intend to use Media sharing, 52.2% intend to use Microblogs, and 28.9% intend to use Podcasts.

In regard to female participants, as shown in Table 12, 87.9% of the female participants intend to use social media in teaching students in the future. 12.1% of the female participants do not intend to use social media in teaching students in the future. Only (175) female participants who reported their intent to use social media in teaching students were asked about the types of social media that they intend to use. Table 13 shows that 51.4% female participants intend to use Social networking, 44.6% intend to use Blogs, 36% intend to use Wikis, 65.7% intend to use Media sharing, 53.7% intend to use Microblogs, and 20.6% intend to use Podcasts.

Figure 12. *Future Intent of Using Social Media in Teaching Students Based on Gender*

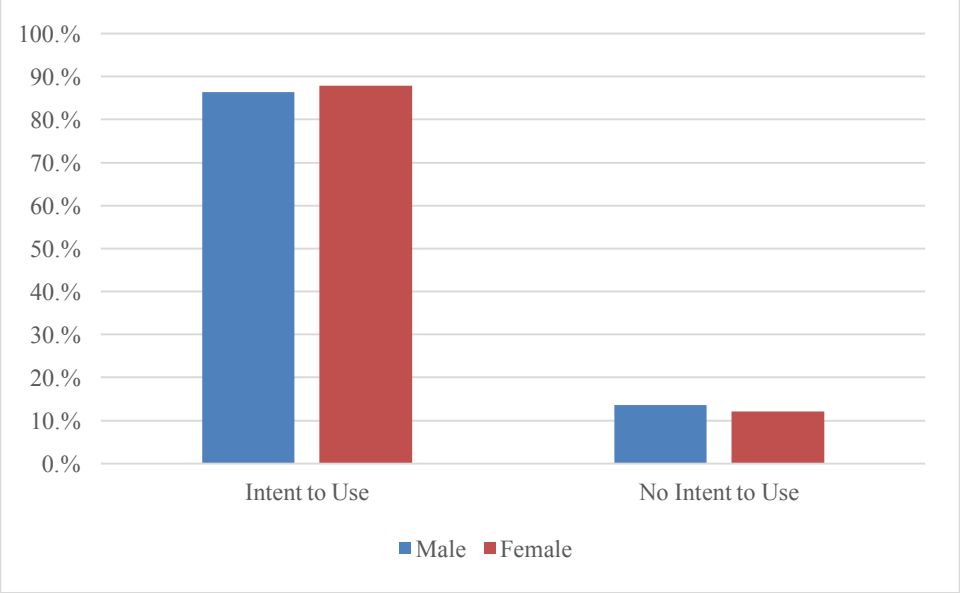


Figure 13. *Types of Social Media University Instructors Intend to Use in Teaching Students Based on Gender*

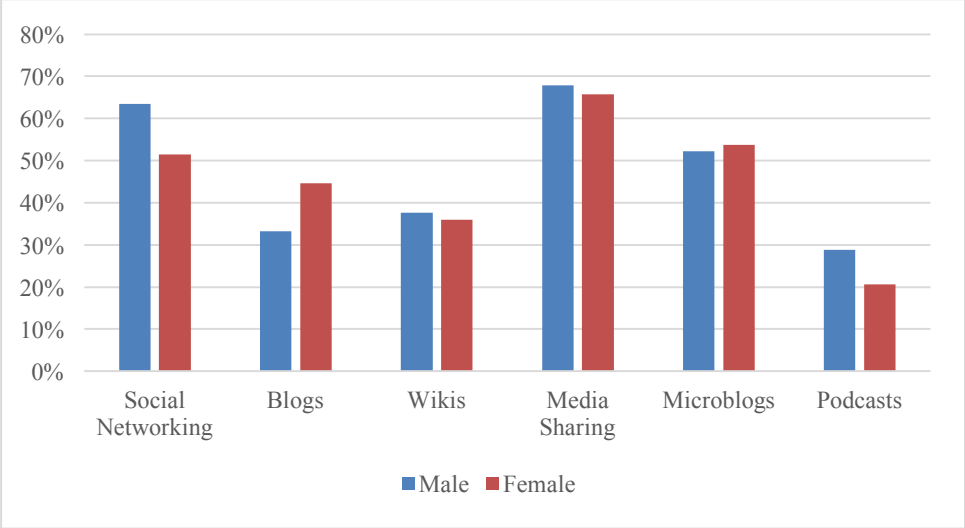


Table 14. *Future Intent of Using Social Media in Teaching Students Based on Age*

Future Intent of Use	35 and below		36-45		46 and older	
	No.	%	No.	%	No.	%
I will use social media in the future in teaching my students.						
Yes	161	87.5%	98	86.7%	60	87%
No	24	12.5%	15	13.3%	9	13%
Total	185	100%	113	100%	69	100%

Table 15. *Types of Social Media University Instructors Intend to Use in Teaching Students Based on Age*

Types of Social Media	35 and below		36-45		46 and older	
	No.	%	No.	%	No.	%
Social networking	92	57.1%	57	58.2%	35	58.3%
Blogs	67	41.6%	42	42.9%	17	28.3%
Wikis	62	38.5%	36	36.7%	15	25%
Media sharing	120	74.5%	57	58.2%	35	58.3%
Microblogs	88	54.7%	50	51%	28	46.7%
Podcasts	43	26.7%	25	25.5%	10	16.7%

In regard to participants who were 35 years old or below, as shown in Table 14, 87.5% of them intend to use social media in teaching students in the future. 12.5% of them do not intend to use social media in teaching students in the future. Only (161n) participants who reported their intent to use social media in teaching students were asked about the types of social media that they intend to use. Table 15 shows that 57.1% of the participants who were 35 years old or below intend to use Social networking, 41.6% intend to use Blogs, 38.5% intend to use Wikis, 74.5% intend to use Media sharing, 54.7% intend to use Microblogs, and 26.7% intend to use Podcasts.

In regard to participants who were between 36 and 45 years old, as shown in Table 14, 86.7% of them intend to use social media in teaching students in the future. 13.3% of them do not intend to use social media in teaching students in the future. Only (98n) participants who reported their intent to use social media in teaching students were asked about the types of social media that they intend to use. Table 15 shows that 58.2% of the participants who were between 36 and 45 years old intend to use Social networking, 42.9% intend to use Blogs, 36.7% intend to use Wikis, 58.2% intend to use Media sharing, 51% intend to use Microblogs, and 25.5% intend to use Podcasts.

In regard to participants who were 46 years old and more, as shown in Table 14, 87% of them intend to use social media in teaching students in the future. 13% of them do not intend to use social media in teaching students in the future. Only (60n) participants who reported their intent to use social media in teaching students were asked about the types of social media that they intend to use. Table 15 shows that 58.3% of the participants who were 46 years old and more intend to use Social networking, 28.3% intend to use Blogs, 25% intend to use Wikis, 58.3% intend to use Media sharing, 46.7% intend to use Microblogs, and 16.7% intend to use Podcasts.

Figure 14. *Future Intent of Using Social Media in Teaching Students Based on Age*

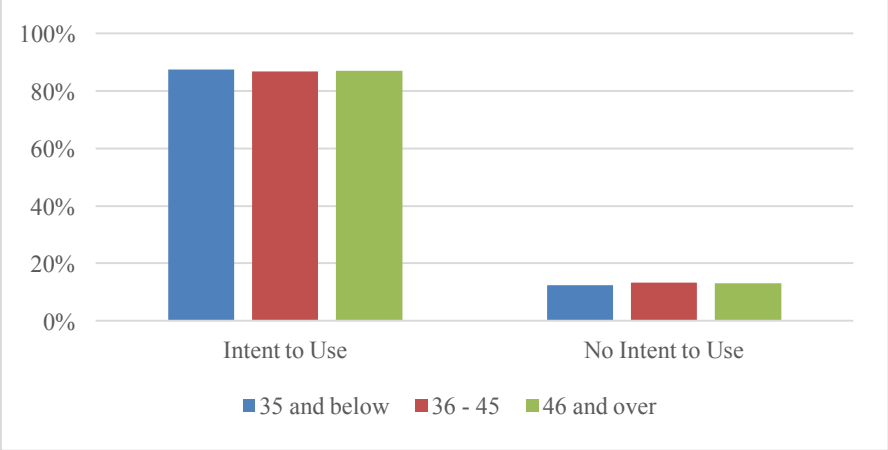
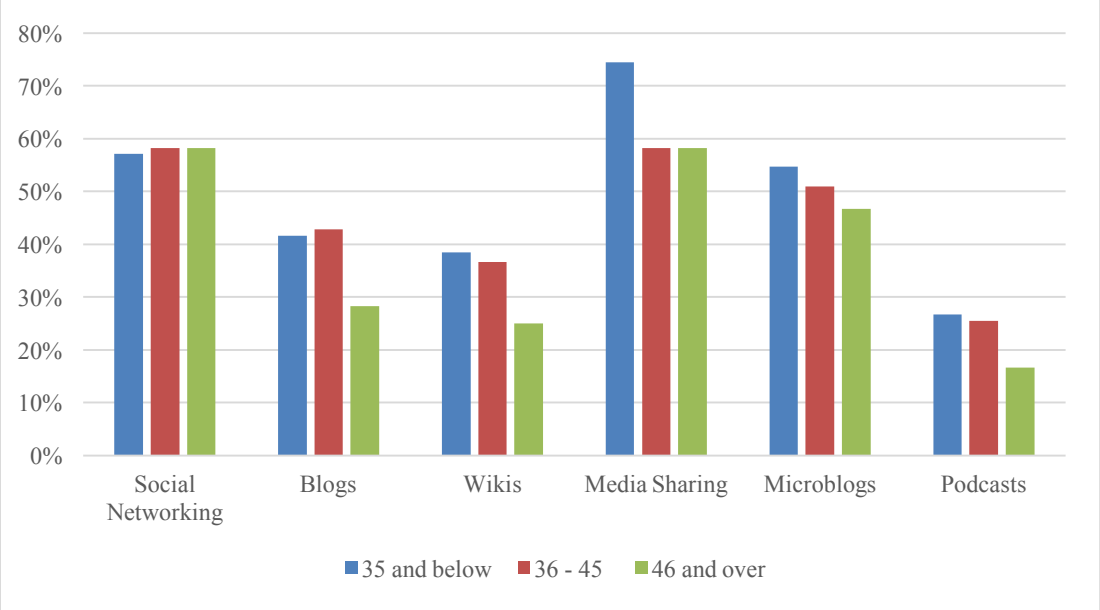


Figure 15. *Types of Social Media University Instructors Intend to Use in Teaching Students Based on Age*



Descriptive Statistics for Perceived Characteristics

Participants were asked about their personal perspectives in regard to the use of social media in teaching students based on the perceived characteristics (Relative Advantage, Compatibility, Complexity, Trialability, Observability). Participants answered each statement by choosing the choice that best described the extent that they would agree or disagree with.

Since the questions about the characteristics of using social media (Question 2 and 3) in teaching students as perceived by the university instructors would not be analyzed by descriptive statistics, it is worth while to report some descriptive statistics about the perceived characteristics. Thus, this section presents descriptive statistics about the perceived characteristics for all the sample responses (Table 16), descriptive statistics about the perceived characteristics for male responses (Table 17), descriptive statistics about the perceived characteristics for female responses (Table 18), descriptive statistics about the perceived characteristics for the responses of participants aged 35 and below (Table 19), and descriptive statistics about the perceived characteristics for the responses of participants aged 36 and older (Table 20).

Table 16. *Descriptive Statistics of Perceived Characteristics for All the Sample*

Statements and Perceived Characteristics	Mean	Median	Mode	SD
Relative Advantage	44.8	42	44	7.79
Using social media in teaching students increases student-instructor interactions	4.02	4	4	0.85
Using social media in teaching students is effective in supporting students' learning process	3.8	4	4	0.93
Using social media in teaching students decreases the dependency of students on the instructors	3.5	4	4	0.99
Using social media in teaching students encourages students' acquisition of creativity skills	3.7	4	4	0.89
Using social media in teaching students encourages students' acquisition of solving problems skills	3.6	4	4	0.92
Using social media in teaching students encourages students' acquisition of critical thinking skills	3.6	4	4	0.95
Using social media in teaching students encourages students' acquisition of collaborative learning skills	3.9	4	4	0.89

Using social media in teaching students increases my productivity	3.6	4	4	0.97
Using social media in teaching students eases achieving my courses goals	3.7	4	4	0.96
Using social media in teaching students saves my time and effort	3.6	4	4	1.04
Using social media in teaching students promotes personalizing learning for students	3.4	4	4	1.06
Compatibility	18	19	20	3.99
Using social media in teaching students is compatible with my university's roles	3.7	3	3	0.98
Using social media in teaching students is compatible with the Saudi culture	3.4	3	3	1.05
Using social media in teaching students is compatible with my teaching method	3.5	4	4	1.04
Social media is compatible with my job's needs	3.6	4	4	1.00
Using social media in teaching students is compatible with 21st century educational methods	4.07	4	4	0.92
Complexity	16.1	16	16	3.07
It is easy for me to create accounts in social media applications.	4.1	4	5	0.94
It is easy for me to share content via social media.	4.1	4	4	0.88
It is easy for me to respond to students' interactions	4.1	4	4	0.92
I can deal with social media technical issues	3.6	4	4	1.01
Observability	10.3	11	12	2.95
The effectiveness of using social media in teaching students is observable to me	3.7	4	4	0.97
I have seen successful experiences about using social media in teaching students	3.4	4	4	1.18
I have seen the effectiveness of using social media in teaching students from my colleagues	3.1	3	4	1.20

Trialability	7	7	8	1.85
I can try using social media in teaching students before deciding to adopt them	3.8	4	4	0.89
I have tried using social media in teaching students	3.2	4	4	1.30

Table 17. *Descriptive Statistics of Perceived Characteristics for Male*

Statements and Perceived Characteristics	Mean	Median	Mode	SD
Relative Advantage	39.8	40	44	8.26
Using social media in teaching students increases student-instructor interactions	3.9	4	4	0.95
Using social media in teaching students is effective in supporting students' learning process	3.8	4	4	1.00
Using social media in teaching students decreases the dependency of students on the instructors	3.4	4	4	1.02
Using social media in teaching students encourages students' acquisition of creativity skills	3.5	4	4	0.88
Using social media in teaching students encourages students' acquisition of solving problems skills	3.5	4	4	0.94
Using social media in teaching students encourages students' acquisition of critical thinking skills	3.4	4	4	0.95
Using social media in teaching students encourages students' acquisition of collaborative learning skills	3.8	4	4	0.86
Using social media in teaching students increases my productivity	3.6	4	4	0.98
Using social media in teaching students eases achieving my courses goals	3.6	4	4	1.03
Using social media in teaching students saves my time and effort	3.6	4	4	1.09
Using social media in teaching students promotes personalizing learning for students	3.3	3	4	1.13

Compatibility	17.5	18	18	4.17
Using social media in teaching students is compatible with my university's roles	3.1	3	3	0.91
Using social media in teaching students is compatible with the Saudi culture	3.3	3	3	1.12
Using social media in teaching students is compatible with my teaching method	3.4	4	4	1.10
Social media is compatible with my job's needs	3.5	4	4	1.08
Using social media in teaching students is compatible with 21st century educational methods	3.9	4	4	0.99
Complexity	16.4	16	16	3.00
It is easy for me to create accounts in social media applications.	4.2	4	5	0.94
It is easy for me to share content via social media.	4.2	4	4	0.84
It is easy for me to respond to students' interactions	4.1	4	4	0.94
I can deal with social media technical issues	3.8	4	4	0.94
Observability	10	11	12	3.04
The effectiveness of using social media in teaching students is observable to me	3.6	4	4	1.04
I have seen successful experiences about using social media in teaching students	3.3	4	4	1.22
I have seen the effectiveness of using social media in teaching students from my colleagues	3.0	3	3	1.19
Trialability	6.8	7	8	1.88
I can try using social media in teaching students before deciding to adopt them	3.7	4	4	0.95
I have tried using social media in teaching students	3	3	4	1.32

Table 18. *Descriptive Statistics of Perceived Characteristics for Female Participants*

Statements and Perceived Characteristics	Mean	Median	Mode	SD
Relative Advantage	42	43	44	6.93
Using social media in teaching students increases student-instructor interactions	4.1	4	4	0.71
Using social media in teaching students is effective in supporting students' learning process	3.9	4	4	0.81
Using social media in teaching students decreases the dependency of students on the instructors	3.6	4	4	0.94
Using social media in teaching students encourages students' acquisition of creativity skills	3.8	4	4	0.86
Using social media in teaching students encourages students' acquisition of solving problems skills	3.7	4	4	0.87
Using social media in teaching students encourages students' acquisition of critical thinking skills	3.7	4	4	0.91
Using social media in teaching students encourages students' acquisition of collaborative learning skills	3.9	4	4	0.88
Using social media in teaching students increases my productivity	3.7	4	4	0.94
Using social media in teaching students eases achieving my courses goals	3.8	4	4	0.84
Using social media in teaching students saves my time and effort	3.7	4	4	0.98
Using social media in teaching students promotes personalizing learning for students	3.5	4	4	0.97
Compatibility	18.4	19	20	3.77
Using social media in teaching students is compatible with my university's roles	3.5	3	3	1.01
Using social media in teaching students is compatible with the Saudi culture	3.4	3	3	0.98

Using social media in teaching students is compatible with my teaching method	3.6	4	4	0.97
Social media is compatible with my job's needs	3.7	4	4	0.90
Using social media in teaching students is compatible with 21st century educational methods	4.1	4	4	0.82
Complexity	15.9	16	16	3.12
It is easy for me to create accounts in social media applications.	4.1	4	5	0.94
It is easy for me to share content via social media.	4.1	4	4	0.90
It is easy for me to respond to students' interactions	4.1	4	4	0.90
I can deal with social media technical issues	3.5	4	4	1.05
Observability	10.6	11	12	2.82
The effectiveness of using social media in teaching students is observable to me	3.7	4	4	0.91
I have seen successful experiences about using social media in teaching students	3.5	4	4	1.14
I have seen the effectiveness of using social media in teaching students from my colleagues	3.3	4	4	1.18
Trialability	7.3	8	8	1.76
I can try using social media in teaching students before deciding to adopt them	3.8	4	4	0.83
I have tried using social media in teaching students	3.4	4	4	1.26

Table 19. *Descriptive Statistics of Perceived Characteristics for Participants Aged 35 Years and Below*

Statements and Perceived Characteristics	Mean	Median	Mode	SD
Relative Advantage	41.9	43	44	7.66
Using social media in teaching students increases student-instructor interactions	4.1	4	4	0.75
Using social media in teaching students is effective in supporting students' learning process	3.9	4	4	0.91

Using social media in teaching students decreases the dependency of students on the instructors	3.7	4	4	0.99
Using social media in teaching students encourages students' acquisition of creativity skills	3.7	4	4	0.88
Using social media in teaching students encourages students' acquisition of solving problems skills	3.7	4	4	0.91
Using social media in teaching students encourages students' acquisition of critical thinking skills	3.7	4	4	0.91
Using social media in teaching students encourages students' acquisition of collaborative learning skills	3.9	4	4	0.91
Using social media in teaching students increases my productivity	3.7	4	4	0.98
Using social media in teaching students eases achieving my courses goals	3.8	4	4	0.94
Using social media in teaching students saves my time and effort	3.7	4	4	1.04
Using social media in teaching students promotes personalizing learning for students	3.5	4	4	1.05
Compatibility	18.2	19	20	4.05
Using social media in teaching students is compatible with my university's roles	3.3	3	3	1.00
Using social media in teaching students is compatible with the Saudi culture	3.4	3	4	1.10
Using social media in teaching students is compatible with my teaching method	3.6	4	4	1.04
Social media is compatible with my job's needs	3.6	4	4	1.01
Using social media in teaching students is compatible with 21st century educational methods	4.1	4	4	0.89
Complexity	16.6	17	20	3.02
It is easy for me to create accounts in social media applications.	4.3	5	5	0.88

It is easy for me to share content via social media.	4.2	4.5	5	0.90
It is easy for me to respond to students' interactions	4.1	4	5	0.97
I can deal with social media technical issues	3.8	4	4	1.00
Observability	10.5	11	12	3.14
The effectiveness of using social media in teaching students is observable to me	3.7	4	4	1.02
I have seen successful experiences about using social media in teaching students	3.5	4	4	1.22
I have seen the effectiveness of using social media in teaching students from my colleagues	3.2	3	4	1.27
Trialability	7	7	6	1.94
I can try using social media in teaching students before deciding to adopt them	3.9	4	4	0.92
I have tried using social media in teaching students	3.1	3	2	1.36

Table 20. *Descriptive Statistics of Perceived Characteristics for Participants Aged 36 Years and Older*

Statements and Perceived Characteristics	Mean	Median	Mode	SD
Relative Advantage	39.6	40	44	7.71
Using social media in teaching students increases student-instructor interactions	3.9	4	4	0.92
Using social media in teaching students is effective in supporting students' learning process	3.8	4	4	0.94
Using social media in teaching students decreases the dependency of students on the instructors	3.4	4	4	0.97
Using social media in teaching students encourages students' acquisition of creativity skills	3.6	4	4	0.89
Using social media in teaching students encourages students' acquisition of solving problems skills	3.5	4	4	0.94
Using social media in teaching students encourages students' acquisition of critical thinking skills	3.4	4	4	0.94

Using social media in teaching students encourages students' acquisition of collaborative learning skills	3.7	4	4	0.86
Using social media in teaching students increases my productivity	3.5	4	4	0.95
Using social media in teaching students eases achieving my courses goals	3.6	4	4	0.98
Using social media in teaching students saves my time and effort	3.6	4	4	1.04
Using social media in teaching students promotes personalizing learning for students	3.3	3	4	1.06
Compatibility	17.7	18.0	18.0	3.84
Using social media in teaching students is compatible with my university's roles	3.3	3	3	0.94
Using social media in teaching students is compatible with the Saudi culture	3.3	3	3	0.98
Using social media in teaching students is compatible with my teaching method	3.4	4	4	1.05
Social media is compatible with my job's needs	3.5	4	4	1.00
Using social media in teaching students is compatible with 21st century educational methods	3.9	4	4	0.94
Complexity	15.7	16	16	3.08
It is easy for me to create accounts in social media applications.	4.0	4	4	0.98
It is easy for me to share content via social media.	4.1	4	4	0.86
It is easy for me to respond to students' interactions	4.0	4	4	0.88
I can deal with social media technical issues	3.5	4	4	1.00
Observability	10.2	10	12	2.70
The effectiveness of using social media in teaching students is observable to me	3.6	4	4	0.92
I have seen successful experiences about using social media in teaching students	3.4	4	4	1.13

I have seen the effectiveness of using social media in teaching students from my colleagues	3.0	3	4	1.12
Trialability	7.0	7	8	1.76
I can try using social media in teaching students before deciding to adopt them	3.7	4	4	0.87
I have tried using social media in teaching students	3.3	4	4	1.22

Research Questions Analysis

This section covered the analysis of the research questions. For organizational proposes, this section has been divided into three parts based on the research questions:

Q 1. At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students?

Q 2. What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' adoption decision of using social media in teaching students?

Q 3. What demographic variables of university instructors in Saudi Arabia influence the adoption decision of using social media in teaching students?

Analysis of Research Question One

The first research question asked at what stage(s) of the Rogers innovation-decision process university instructors identify themselves with currently in the adoption of social media in teaching students. Participants were asked about their current situation in regard to the use of social media in teaching students based on the adoption stages (Knowledge, Persuasion, Decision, Implementation, and Confirmation). Participants answered each statement by choosing the choice that best described the extent to which they would agree or disagree. This question has been analyzed using descriptive statistics specifically central tendency. Table 21 presents the

central tendency and the standard deviation for each statement by itself and for each adoption stage.

Table 21. *Descriptive Statistics for University Instructors Innovation-decision Stages*

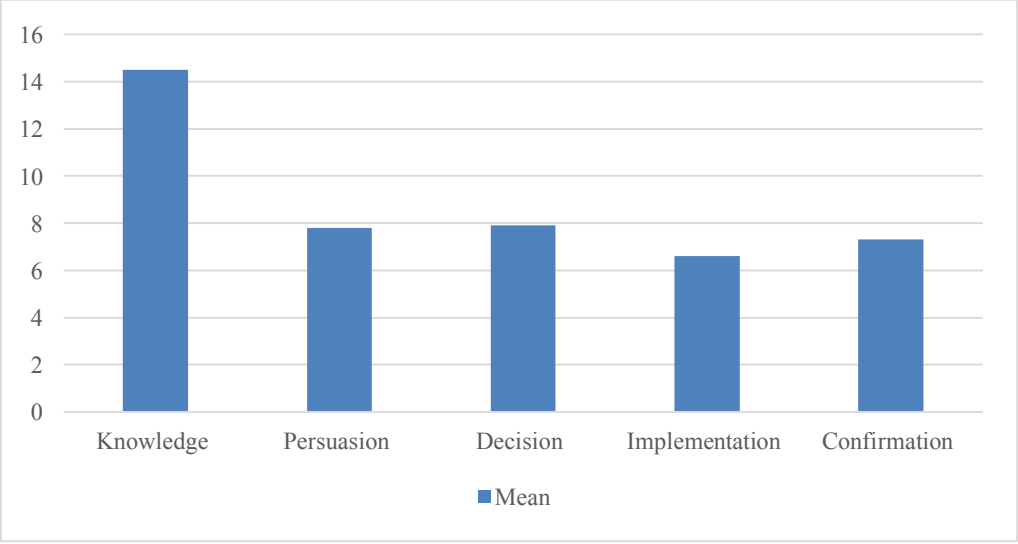
Statements and Innovation-decision Stages	Mean	Median	Mode	SD
Knowledge	14.5	15	16	3.5
I have heard about the use of social media in teaching students	3.9	4	4	1
I know how to use social media in teaching students	3.6	4	4	1
I understand the principles that underline how social media works in teaching students	3.4	4	4	1
I know what type of social media is the most appropriate in achieving my course goals	3.4	4	4	1
Persuasion	7.8	8	8	1.8
I have a positive perspective about the use of social media in teaching students	3.8	4	4	1
I anticipate a bright future of using social media in teaching students	3.9	4	4	.98
Decision	7.9	8	8	1.7
I intend to seek additional information about the use of social media in teaching students	4	4	4	.94
I intend to try the use of social media in teaching students	3.9	4	4	.98
Implementation	6.6	7	8	2
I use social media in teaching students on a regular basis	3	3	2	1.2
I search for additional information about the use of social media in teaching students	3.5	4	4	1
Confirmation	7.3	8	8	1.9
I recognize the benefits of using social media in teaching students	3.8	4	4	.98

I promote the use of social media in teaching students to my colleagues	3.5	4	4	1

As presented in table 21, the overall mean for the Knowledge stage was 14.5 with standard deviation 3.5. The overall mean for the Persuasion stage was 7.8 with standard deviation 1.8. The overall mean for the Decision stage was 7.9 with standard deviation 1.7. The overall mean for the Implementation stage was 6.6 with standard deviation 2. The overall mean for the Confirmation stage was 7.3 with standard deviation 1.9.

Based on the analysis of the participants' responses in regard to their current situation in the adoption stages in terms of using of social media in teaching students, university instructors reported the highest mean 14.5 for the Knowledge stage, followed by the Decision stage with a mean of 7.9, followed by the Persuasion stage with a mean of 7.8, and followed by the Confirmation stage with a mean of 7.3. University instructors reported the lowest mean for the Implementation stage with a mean of 6.6.

Figure 16 *University Instructors Innovation-decision Stages*



Analysis of Research Question Two

The second research question asked what perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' adoption decision of social media in teaching students. Thus, the five perceived characteristics (relative advantage, compatibility, complexity, trialability, and observability) were entered as independent variables while the university instructors' adoption decision was entered as the dependent variable. A logistic regression was performed to ascertain the effects of the independent variables on the dependent variable.

The assumptions of the logistic regression have been analyzed in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of linearity of the independent continuous variables with the dependent variable, the assumption of multicollinearity, and outliers. The checking results indicate that all of the assumptions were met.

Table 22. *Omnibus Tests of Model Coefficients of Research Question Two*

	Chi-square	df	Sig
Step	144.595	5	.000
Block	144.595	5	.000
Model	144.595	5	.000

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As shown in table 22, the logistic regression of the all independent variables combined was statistically significant in predicting the dependent variable, $\chi^2(5) = 144.595$, $p < .000$.

Table 23. *Model Summary of Research Question Two*

Step	-2 Log likelihood	Nagelkerke R Square
1	135.813	.613

Table 24. *Classification Table of Research Question Two*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	27	21	56.3
	Yes	6	298	98.0
Overall Percentage				92.3

The cut value is .500

The Model Summary helps in understanding how much variation in university instructors' adoption decision can be explained by the model. Based on Table 23, the model explained 61% (Nagelkerke R^2) of the variance in university instructors' adoption decision. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in Table 24, results illustrated that the model correctly classified 92.3% of cases with a specificity value of 56.3 and a sensitivity value of 98.0. This means that 56.3% of the participants who did not decide to use social media were correctly predicted by the model and decided not to use social media; 98.0% of the participants who decided to use social media were correctly predicted by the model to decide to use social media.

Table 25. *Variables in the Equation of Research Question Two*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Relative Advantage	.171	.048	12.841	1	. 000	1.187
Compatibility	.372	.101	13.471	1	. 000	1.451
Complexity	.139	.073	3.619	1	. 057	1.149
Trialability	-.088	.182	.233	1	. 629	.916

Observability	.022	.122	.033	1	. 856	1.022

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 25, results illustrated that relative advantage, and compatibility were significant predictors for university instructors' adoption decision of social media in teaching students. The increment of the perceived relative advantage and compatibility were associated with the increment of the likelihood of university instructors' decision to use social media in teaching students. For each unit of increase in relative advantage, participants were 1.187 times more likely to decide to use social media in teaching students. Also, for each unit of increase in compatibility, participants were 1.451 times more likely to decide to use social media in teaching students.

Analysis of Research Question Three

The third research question asked what demographic variables of university instructors in Saudi Arabia influence the adoption decision of social media in teaching students. The answer this question was divided in two parts: the direct influence of demographic variables (age and gender) on university instructors' adoption decision and the influence of demographic variables on the five perceived characteristics in predicting university instructors' adoption decision.

Part One

In this part, the researcher aimed to analyze the direct influence of demographic variables on university instructors' adoption decision. Thus, the demographic variables (age and gender) were entered as independent variables while the university instructors' adoption decision was entered as the dependent variable. A logistic regression was performed to ascertain the effects of the independent variables on the dependent variable.

The assumptions of the logistic regression have been analyzed in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of the independent continuous variables with the dependent variable, the assumption of multicollinearity, and outliers. The checking results indicate that all of the assumptions were met.

Table 26. *Omnibus Tests of Model Coefficients of Demographic Variables Direct Influence*

	Chi-square	df	Sig
Step	.478	2	.787
Block	.478	2	. 787
Model	.478	2	. 787

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As shown in Table 26, the logistic regression of the all independent variables combined was not statistically significant in predicting the dependent variable, $\chi^2(2) = .478$, $p > .787$.

Table 27. *Model Summary of Demographic Variables Direct Influence*

Step	-2 Log likelihood	Nagelkerke R Square
1	275.750	.002

Table 28. *Classification Table of Demographic Variables Direct Influence*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	0	46	.0
	Yes	0	318	100
Overall Percentage				87.4

The cut value is .500

The Model Summary helps in understanding how much variation in participants' adoption decision can be explained by the model. Based on Table 27, the model explained .002% (Nagelkerke R^2) of the variance in participants' adoption decision. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in Table 28, results illustrated that the model correctly classified 87.4% of cases with a specificity value of .0 and a sensitivity value of 100. This means that .0% of the participants who did not decide to use social media were correctly predicted by the model decided not to use social media; 100% of the participants who decided to use social media were correctly predicted by the model to decide to use social media.

Table 29. *Variables in the Equation of Demographic Variables Direct Influence*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Age	-.012	.018	.480	1	. 489	.998
Gender(1)	.010	.320	.001	1	. 976	1.010

Gender was coded as 0 for female and 1 for male.

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 29, results illustrated that age and gender were not significant predictors for participants' adoption decision of social media in teaching students.

Part Two

In this part, the researcher aimed to analyze the influence of demographic variables on the five perceived characteristics in predicting university instructors' adoption decision. The data were grouped based on each demographic variable separately. Therefore, the data were analyzed four times: 1) male participants, 2) female participants, 3) participants aged 35 years and below, 4) participants aged from 36 and older. The dependent and independent variables were the same for all groups of data. Thus, the five perceived characteristics (relative advantage, compatibility,

complexity, trialability, and observability) were entered as independent variables while the university instructors' adoption decision was entered as the dependent variable. A logistic regression was performed to ascertain the effects of the independent variables on the dependent variable for each group of data.

1- Male University Instructors

In this part, the researcher aimed to determine what perceived characteristics in the persuasion stage of Roger's model of innovation influence male university instructors' adoption decision of social media in teaching students. The assumptions of the logistic regression have been analyzed in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of linearity of the independent continuous variables with the dependent variable, the assumption of multicollinearity, and outliers. The checking results indicate that all of the assumptions were met.

Table 30. *Omnibus Tests of Model Coefficients of Male University Instructors*

	Chi-square	df	Sig
Step	78.838	5	.000
Block	78.838	5	.000
Model	78.838	5	.000

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As shown in table 30, the logistic regression of all independent variables combined was statistically significant in predicting the dependent variable, $\chi^2(5) = 78.838$, $p < .000$.

Table 31. *Model Summary of Male University Instructors*

Step	-2 Log likelihood	Nagelkerke R Square
1	62.818	.657

Table 32. *Classification Table of Male University Instructors*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	16	9	64.0
	Yes	4	140	97.2
Overall Percentage				92.3

The cut value is .500

The Model Summary helps in understanding how much variation in participants' adoption decision can be explained by the model. Based on table 31, the model explained 65% (Nagelkerke R^2) of the variance in male participants' adoption decision. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in table 32, results illustrated that the model correctly classified 92.3% of cases with a specificity value of 64.0 and a sensitivity value of 97.2. This means that 64% of male participants who did not decide to use social media were correctly predicted by the model decided not to use social media; 97.2% of male participants who decided to use social media were correctly predicted by the model to decide to use social media.

Table 33. *Variables in the Equation of Male University Instructors*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Relative Advantage	.113	.065	3.022	1	. 082	1.120
Compatibility	.513	.162	9.986	1	. 002	1.669
Complexity	.053	.119	.198	1	. 656	1.055
Trialability	-.037	.248	.022	1	. 882	.964
Observability	-.037	.185	.041	1	. 840	.963

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 33, results illustrated

that compatibility was the only significant predictor for male participants' adoption decision of social media in teaching students. The increment compatibility was associated with the increment of the likelihood of male participants' decision to use social media in teaching students. For each unit of increase in compatibility, participants were 1.669 times more likely to decide to use social media in teaching students.

2- Female University Instructors

In this part, the researcher aimed to determine what perceived characteristics in the persuasion stage of Roger's model of innovation influence female university instructors' adoption decision of social media in teaching students. The assumptions of the logistic regression have been analyzed the in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of multicollinearity, and outliers. Using all of the eleven terms in the model, a Bonferroni correction was applied determining statistical significance being accepted when (.05/11=.0045) $p < 0.0045$ (Tabachnick and Fidell, 2007). As a result, all of the continuous independent variables met the assumption of linearity. The checking results indicate that all of the assumptions were met.

Table 34. *Omnibus Tests of Model Coefficients of Female University Instructors*

	Chi-square	df	Sig
Step	68.507	5	.000
Block	68.507	5	.000
Model	68.507	5	.000

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As shown in Table 34, the logistic regression of all independent variables combined was statistically significant in predicting the dependent variable, $\chi^2(5) = 68.507$, $p < .000$.

Table 35. *Model Summary of Female University Instructors*

Step	-2 Log likelihood	Nagelkerke R Square
1	65.172	.604

Table 36. *Classification Table of Female University Instructors*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	10	12	45.5
	Yes	4	154	97.5
Overall Percentage				91.1

The cut value is .500

The Model Summary helps in understanding how much variation in participants' adoption decision can be explained by the model. Based on Table 35, the model explained 60% (Nagelkerke R^2) of the variance in female participants' adoption decision. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in Table 36, results illustrated that the model correctly classified 91.1% of cases with a specificity value of 45.5 and a sensitivity value of 97.5. This means that 45.5% of female participants who did not decide to use social media were correctly predicted by the model and decided not to use social media; 97.5% of female participants who decided to use social media were correctly predicted by the model to decide to use social media.

Table 37. *Variables in the Equation of Female University Instructors*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Relative Advantage	.297	.086	11.803	1	. 001	1.346
Compatibility	.274	.143	3.673	1	. 055	1.135
Complexity	.184	.105	3.093	1	. 079	1.202
Trialability	-.021	.290	.005	1	. 942	.979

Observability	.015	.180	.007	1	. 934	1.015

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 37, results illustrated that relative advantage was the only significant predictor for female participants' adoption decision of social media in teaching students. The increment of the perceived relative advantage was associated with the increment of the likelihood of female participants' decision to use social media in teaching students. For each unit of increase in relative advantage, participants were 1.346 times more likely to decide to use social media in teaching students.

3- University Instructors Aged 35 Years and Below

In this part, the researcher aimed to determine what perceived characteristics in the persuasion stage of Roger's model of innovation influence the adoption decision of social media in teaching students for university instructors aged 35 years and below. The assumptions of the logistic regression have been analyzed the in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of linearity of the independent continuous variables with the dependent variable, the assumption of multicollinearity, and outliers. The checking results indicate that all of the assumptions were met.

Table 38. *Omnibus Tests of Model Coefficients of University Instructors Aged 35 years and below*

	Chi-square	df	Sig
Step	81.922	5	.000
Block	81.922	5	.000
Model	81.922	5	.000

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As

shown in Table 38, the logistic regression of all independent variables combined was statistically significant in predicting the dependent variable, $\chi^2(5) = 81.922$, $p < .000$.

Table 39. *Model Summary of University Instructors Aged 35 years and below*

Step	-2 Log likelihood	Nagelkerke R Square
1	49.069	.712

Table 40. *Classification Table of University Instructors Aged 35 years and below*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	14	8	63.6
	Yes	3	145	98.0
Overall Percentage				93.5

The cut value is .500

The Model Summary helps in understanding how much variation in participants' adoption decision can be explained by the model. Based on Table 39, the model explained 71% (Nagelkerke R^2) of the variance the adoption decision for participants aged 35 years and below. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in Table 40, results illustrated that the model correctly classified 93.5% of cases with a specificity value of 63.6 and a sensitivity value of 98.0. This means that 63.6% of participants aged 35 years and below who did not decide to use social media were correctly predicted by the model and decided not to use social media; 98.0% of participants aged 35 years and below who decided to use social media were correctly predicted by the model to decide to use social media.

Table 41. *Variables in the Equation of University Instructors Aged 35 years and below*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Relative Advantage	.363	.113	10.287	1	. 001	1.438
Compatibility	.364	.181	4.042	1	. 044	1.440
Complexity	.219	.129	2.882	1	. 090	1.245
Trialability	-.429	.336	1.623	1	. 203	.651
Observability	-.016	.202	.007	1	. 935	.984

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 41, results illustrated that relative advantage, and compatibility were significant predictors for the adoption decision of social media in teaching students for participants aged 35 years and below. The increment of the perceived relative advantage, and compatibility were associated with the increment of the likelihood of the adoption decision of using social media in teaching students for participants aged 35 years and below. For each unit of increase in relative advantage, participants were 1.438 times more likely to decide to use social media in teaching students. Also, for each unit of increase in compatibility, participants were 1.440 times more likely to decide to use social media in teaching students.

4- University Instructors Aged from 36 and Older

In this part, the researcher aimed to determine what perceived characteristics in the persuasion stage of Roger's model of innovation influence the adoption decision of social media in teaching students for university instructors aged from 36 Years and Older. The assumptions of the logistic regression have been analyzed in order to get precise and accurate interpretation of the results. The researcher checked the assumption of independency, the assumption of linearity

of the independent continuous variables with the dependent variable, the assumption of multicollinearity, and outliers. The checking results indicate that all of the assumptions were met.

Table 42. *Omnibus Tests of Model Coefficients of University Instructors Aged from 36 Years and Older*

	Chi-square	df	Sig
Step	62.134	5	.000
Block	62.134	5	.000
Model	62.134	5	.000

The Omnibus tests of model coefficients table show the overall statistical significance of the model. The alpha ($p < .05$) was used in this study in order to determine significance. As shown in Table 42, the logistic regression of the all independent variables combined was statistically significant in predicting the dependent variable, $\chi^2(5) = 62.134$, $p < .000$.

Table 43. *Model Summary of University Instructors Aged from 36 Years and Older*

Step	-2 Log likelihood	Nagelkerke R Square
1	70.839	.569

Table 44. *Classification Table of University Instructors Aged from 36 Years and Older*

Observed		Predicted		
		Decision of Use		Percentage Correct
		No	Yes	
Decision of Use	No	14	9	60.9
	Yes	3	138	97.9
Overall Percentage				92.7

The cut value is .500

The Model Summary helps in understanding how much variation in participants' adoption decision can be explained by the model. Based on table 43, the model explained 56% (Nagelkerke R^2) of the variance the adoption decision for participants aged from 36 Years and

older. The Classification Table helps in examining the efficiency of the predicted classification with actual classification. As shown in table 44, results illustrated that the model correctly classified 92.7% of cases with a specificity value of 60.9 and a sensitivity value of 97.9. This means that 60.9% of participants aged from 36 Years and older who did not decide to use social media were correctly predicted by the model and decided not to use social media; 97.9% of participants aged from 36 Years and older who decided to use social media were correctly predicted by the model to decide to use social media.

Table. 45 *Variables in the Equation of University Instructors Aged from 36 Years and Older*

Independent Variables	B	S.E	Wald	df	Sig.	Exp(B)
Relative Advantage	.122	.058	4.523	1	. 033	1.130
Compatibility	.351	.138	6.477	1	. 011	1.420
Complexity	.161	.101	2.542	1	. 111	1.175
Trialability	.090	.231	.151	1	. 698	1.094
Observability	-.006	.190	.001	1	. 947	.994

The Variables in the Equation table helps in showing the significance of each independent variable and its contribution to the model. As shown in Table 45, results illustrated that relative advantage and compatibility were significant predictors for the adoption decision of social media in teaching students for participants aged from 36 Years and older. The increment of the perceived relative advantage, and compatibility were associated with the increment of the likelihood of the adoption decision of using social media in teaching students for participants aged from 36 Years and older. For each unit of increase in relative advantage, participants were 1.130 times more likely to decide to use social media in teaching students. Furthermore, for each unit of increase in compatibility, participants were 1.420 times more likely to decide to use social media in teaching students.

Analysis of the Open-ended Question

This section aims to analyze the open-ended question that was listed at the end of the questionnaire. This question was shown to only to university instructors who decided not to use social media in teaching students in the future. The open-ended question asked about what the personal reasons that were led the participants to this decision. There were 13% (51n) of the participants who decided not to use social media. Only 46 of them responded to this question. Some participants wrote one reason while others wrote more than one.

Some of the reasons are related to the instructors themselves. 28% of the respondents to the open-ended question reported that using social media in teaching students is a time-consuming task. A previous user of social media in teaching students stated "it needs a lot of time out of the official working time to respond to students' inquiries and to follow up with students' discussions". 10.8% attributed their decision for not using social media because of its complexity. Moreover, 8.7% reported their lack of knowledge about its benefits. One instructor said "Its benefits are not clear to me". 6.5% of the respondents reported that using social media in teaching students is not compatible with their way of teaching. Only one respondant (2.1%) reported his age as a barrier to using social media in teaching.

Other reasons were academic. 21.7%, of the respondents to the open-ended question, reported inefficiency using social media in teaching students as a reason for their decision. One participant stated "I believe social media are good for sharing general background or news about my subject but not teaching". Another described most of its users in teaching as "unsuccessful instructors" and attributed their use to "cover their knowledge deficiency" and to "escape from students' questions". A previous user of social media in teaching students stated "I didn't notice any advantage from using social media in teaching". 17.3% assume that social media is not

appropriate for their courses. They mentioned that they teach courses in pure mathematics, electrical engineering, and medicine. One participant, stated that “scientific fields need laboratories rather than social media”. 15.2% reported that the lack of control on students when teaching using social media. An instructor stated that one of the cons when teaching using social media is “students’ ability to create fake accounts which makes the environment more suitable for people who want to provide negative non constructive comments”. A previous user stated “many students believe that attending these courses is not mandatory”. 4.3% believed that the use of social media in teaching does not cause interaction between students and instructor. In addition, an instructor (2.1%) assumed that the use of social media in teaching is inappropriate with undergraduate students.

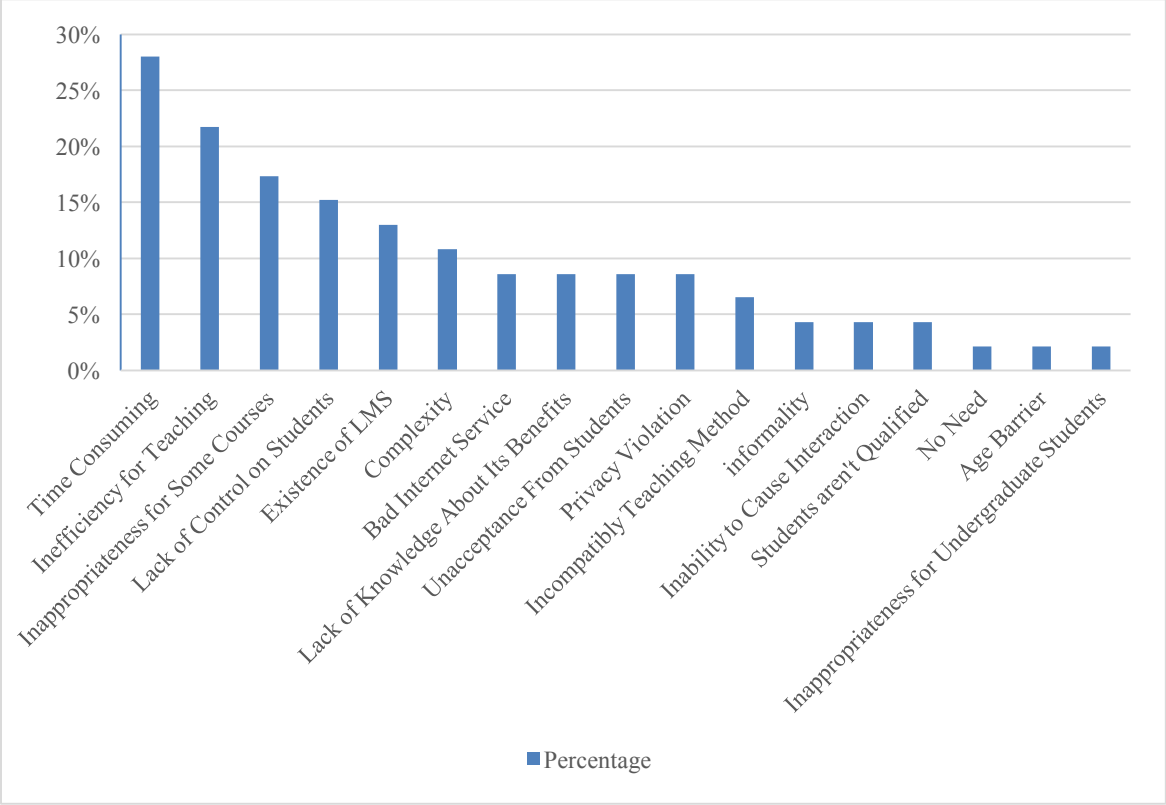
Some instructors attributed other reasons to their students. 4.3% reported that students are not qualified for the use of social media in their learning. A previous user stated that “students are not qualified enough to cope with this type of teaching”. Moreover, 8.6% reported that students consider social media for social networking and could not accept it as a teaching tool. 8.6% instructors mentioned they would not accept the use of social media in teaching because it violates students' privacy. One female instructor, who reported her previous experience with the use of social media in teaching, stated that “some female students create new social media accounts because they would prefer not to use their personal account for learning”. Another female instructor stated “Some female students cannot afford the use of social media for familial and societal reasons”.

There are further reasons for the lack of intent of using social media in teaching that should be mentioned. An instructor (2.1%) assumed that there is no need its use. 4.3% refused to use social media because of its informality which could cause legal issues. 8.6% impute their

decision because of the bad Internet service. One instructor stated “it is unfair to ask students to use social media since some of them don’t have Internet access, specifically students in rural areas”. 13% attributed their decision to the existence of the LMSs which are more suitable and effective than they assumed. An instructor stated “I have used Blackboard and I think it has the required privacy and maintains the ethical standards as all communications are saved for the benefit of both students and their instructors”. Another stated “ I use Blackboard because it is effective. This is what I have experienced during my study in UK and USA”.

Something that should be mentioned here is that 8.6 of the respondents reported that they may use social media to contact students, but they would not use it for teaching purposes. In summary, most of the personal reasons that have been reported in the open-ended question were categorized as follow: time-consuming task, inefficiency of social media in teaching, inappropriateness for some courses, lack of control on students, existence of the LMSs, complexity of social media, bad Internet service, lack of knowledge about its benefits, unacceptance from students, privacy violation, incompatibly of social media with instructors’ teaching methods, its informality, inability to cause interaction between students and instructor, students are not qualified for its use in learning, no need, age barrier, inappropriateness for undergraduate students.

Figure 17 *Participants Responses for The Open-ended Question*



Summary

This chapter covered the reliability of the instrument and presented some descriptive statistics about the sample characteristics and participants' responses. Then, it presented the results of the study based on the study questions. Descriptive statistics were used in analyzing research question one while logistic regression was used in analyzing research questions two and three. Then, a content analysis of the open-ended analysis was presented at the end of this chapter. The findings and discussion of the results are presented in Chapter Five.

CHAPTER 5 DISCUSSION AND CONCLUSION

The core of this study was to investigate the adoption of social media by university instructors in Saudi Arabia for teaching students. A questionnaire was built based on Rogers' Diffusion of Innovations theory for the purpose of the study. 387 university instructors from all of the 28 Saudi public universities responded to the questionnaire. Descriptive statistics and logistic regression were used in analyzing the results.

The first chapter in this study showed the eagerness of the Saudi government in general and the Saudi Ministry of Education in specific toward social media. It also identified the ambiguity of university instructors' adoption of social media for educating students in Saudi Arabia. The literature review in the second chapter covered the definition of social media and its types, the integration of social media in teaching higher education students, faculty adoption of social media, and the impact of demographic variables on social media. The third chapter described the design of this study, population and sampling, instrument development, instrument translation, pilot study, and data analysis. The fourth chapter presented the results of the research questions, reliability of the instrument, descriptive statistics about the sample characteristics and participants responses, and content analysis for the open-ended analysis. The fifth chapter presents the discussion of major findings, rationale and significance of the study, limitations, implications for the field of Instructional Technology, and recommendations for future research.

Discussion of Major Findings

This section goes over the current and past use and future intent of using social media in teaching students. It also discusses the types of social media that participants use or intend to use in teaching students. Moreover, it discusses the personal reasons that participants stated in the open-ended question. Lastly, it discusses the major findings in regard to the research questions:

Q 1. At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students?

Q 2. What perceived characteristics in the persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of using social media in teaching students?

Q 3. What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of using social media in teaching students?

Current or Past Use. Findings show that 51.2% of university instructors (198 out of 387) in Saudi Arabia have used social media in teaching students at the current time or in the past. According to Rogers (2003), "the part of the diffusion curve from about 10% adoption to 20% adoption is the heart of the diffusion process. After that point, it is often impossible to stop the further diffusion of a new idea" (p. 274). This implies that university instructors use of social media in teaching students has a greater chance to continue to diffuse in the future.

In terms of the gender of users, the majority of users (57.2%) were female university instructors, whereas male university instructors represented 42.8% of the users. In terms of the age of the users, the majority of users (44.9%) were aged 35 years and below, followed by 36 to 45 years (34.7%), and then by 46 years and older (20.3%). However, university instructors aged 36 to 45 years recorded the highest use (57.5). This finding is consistent with the findings of Seaman and Tinti-Kane that US university instructors aged 35 to 44 were the highest users of social media in teaching compared to other age groups (2013).

Findings show that 57.1% of the university instructors who use social media in teaching used media sharing sites, followed by social networking (54.5%), microblogging (36.4%), wikis (32.8%), blogs (24.2%), and podcasts (10.6%). Based on Rogers' Diffusion Theory (2003), any

social media type that its current use or past use in teaching exceeded 20% has a greater chance of continuing diffusion. Findings of this study showed that all social media types in current use exceeded 20%, except podcasts (10.6%). Female university instructors reported higher use of blogs, wikis, media sharing, and microblogs than male university instructors while males reported higher use in social networking and podcasts. University instructors aged 36 to 45 years reported the highest use of blogs, wikis, media sharing, microblogs, and podcasts than other age groups while university instructors aged 46 years and older reported the highest use of social networking in teaching students.

Future Intent of Use. Findings show that 87% of the university instructors (336 out of 387) in Saudi Arabia decided to use social media in teaching students in the future while the remaining (51 out of 387) decided not to in teaching students in the future. This massive quick percentage of future adoption decision implies that decisions from university instructors in Saudi Arabia to use social media in teaching students can be taken individually. “The more persons involved in making an innovation decision, the slower the rate of adoption” (Rogers, 2003, P.221).

Rogers stated that “Innovations with a high rate of adoption should have a low rate of discontinuance.” (Rogers, 2003, P.191). Only 2.5% of the university instructors (5 out of 198) who reported their use of social media in teaching intended to discontinue while the majority (97.5%) intended to continue. Rogers (2003) assumes that “High discontinuers are characterized by less formal education, lower socioeconomic status” (P.191). The small percentage of discontinuance in this study might be attributed to the characteristics of the university instructors in Saudi Arabia as they have high formal education and high socioeconomic status.

In terms of gender, 87.9% of female university instructors and 86.4% of male university instructors decided to use social media in teaching students in the future. In terms of age, 87.5% of university instructors aged 35 and below, 86.7% of the university instructors aged 36 to 45, and 87% of the university instructors aged 46 and over decided to use social media in teaching students in the future. Findings show that university instructors in Saudi Arabia reported their intent to use media sharing sites (66.7%), followed by social networking (57.1%), microblogging (52.7%), blogs (39%), wikis (36.9%), and podcasts (24.7%). All social media types recorded an increase in the intent of use compared to current or past use. Male university instructors reported higher intent of using social networking, wikis, media sharing sites, and podcasts, whereas female university instructors reported higher intent of using blogs, and microblogs. University instructors aged 35 years and below reported the highest intent of using media sharing sites, microblogs, wikis, and podcasts; university instructors aged 36 to 45 years reported the highest intent of using blogs; university instructors aged 46 years and older reported the highest intent of using social networking.

Open-ended Question. The open-ended question asked about what the personal reasons were that led the participants to this decision. This question was exhibited to only university instructors who decided not to use social media in teaching students in the future. The personal reasons that were reported in the open-ended question were categorized as follow: time-consuming task, inefficiency of social media in teaching, inappropriateness for some courses, lack of control over students, existence of the LMSs, complexity of social media, bad Internet service, lack of knowledge about its benefits, unacceptance from students, privacy violation, incompatibility of social media with instructors' teaching methods, its informality, inability to cause interaction between students and instructor, students not qualified for its use in learning, no

need, age barrier, and inappropriateness for undergraduate students. Some of these reasons are consistent with previous studies. In regard to being a time-consuming task, Moran, Seaman, and Tinti-Kane (2011) mentioned that the majority of faculty in the United States reported that social media takes more time than what it is worth. In terms of the inappropriateness for some courses, Seaman and Tinti-Kane (2013) indicated that some academic fields use social media in teaching more than other fields. They indicated that Humanities and Arts faculty reported the highest social media teaching usage while Mathematics and Computer Science faculty had the lowest. In terms of privacy, privacy and integrity were the greatest concerns about social media in the United States (Moran, Seaman, and Tinti-Kane, 2011; Devine, 2015).

Research Question 1: At what stage(s) of the Rogers innovation-decision process do university instructors identify themselves with currently in the adoption of social media in teaching students? According to Rogers (2003), "an individual's decision about an innovation is not an instantaneous act. Rather, it is a process that occurs over time and consists of a series of different actions" (P. 169). University instructors reported the highest mean of 14.5 for the Knowledge stage, followed by the Decision stage with a mean of 7.9, the Persuasion stage with a mean of 7.8, and the Confirmation stage with a mean of 7.3. Rogers (2003) mentioned that in the sequence of the innovation-decision process some innovations may differ depending on the cultural settings. Based on the results of this study, it implies that the Saudi culture maybe impacted by the sequence decision process in regard to the use of social media in teaching. Rogers (2003) indicated that group pressure may alter the sequence of the innovation-decision process to be Knowledge, Decision, and Persuasion instead of Knowledge, Persuasion, and Decision. This happens usually with cultures that prioritize groups over individuals. The Saudi culture values groups over individuals.

Research Question 2: What perceived characteristics in the Persuasion stage of Roger's model of innovation influence university instructors' future adoption decision of social media in teaching students? Findings show that all of the five characteristics combined (relative advantage, compatibility, complexity, trialability, and observability) of using social media in teaching were statistically significant in predicting university instructors' future decision of using social media in teaching students. Rogers (2003) pointed out that the perceived attributes of an innovation can predict from 49% to 87% about its adoption. Findings show that the five characteristics combined explained 61% of the variance in university instructors' adoption decision.

Of the five characteristics of using social media in teaching, relative advantage, and compatibility were significant predictors for university instructors' adoption decision of social media in teaching students. The increment of the perceived relative advantage and compatibility were associated with the increment of the likelihood of university instructors' decision to use social media in teaching students. Compatibility contributed higher than relative advantage in this prediction. This finding is consistent with what Rogers (2003) mentioned, that is, relative advantage and compatibility are the strongest predictors among the five characteristics for innovation adoption. It also is consistent with the findings of (Elkaseh, Wong and Fung, 2016; Ajjan and Hartshorne, 2008; Devine, 2015) in regard to the impact of the relative advantage of using social media in teaching on its adoption, and it is consistent with the findings of Ajjan and Hartshorne (2008) in regard to the impact of the compatibility of using social media in teaching on its adoption. Rogers (2003) mentioned that innovations with high-perceived compatibility and relative advantage are less likely to be discontinued. This may explain the small percentage of university instructors' discontinuous (2.5%) use of social media in teaching students.

The complexity (or lack of complexity as mentioned earlier in Survey Development in Chapter Three), trialability, and observability of using social media in teaching students were not significant predictors. This conflicts with the findings of (Elkaseh, Wong and Fung, 2016; Ajjan and Hartshorne, 2008; Devine, 2015) in regard to the impact of the complexity (or lack of complexity) of using social media in teaching on its adoption, and it conflicts with the findings of (Ajjan and Hartshorne, 2008) in regard to the impact of the observability of using social media in teaching on its adoption. An explanation of the nonsignificance of complexity (or lack of complexity) might be attributed to the complexity of using social media on instructors and students as reported in the open-ended question. An explanation of the nonsignificance of trialability might be attributed to the low mean (3.2) of the item "I have tried using social media in teaching students" which was the second lowest mean of the perceived characteristics section. An explanation of the nonsignificance of observability might be attributed to the low means for all its items and specifically the item that asks "I have seen the effectiveness of using social media in teaching students from my colleagues". It was the lowest mean (3.1) of the perceived characteristics section. It is worthwhile to mention that none of the previous studies has investigated the influence of observability and trialability on the adoption of social media in teaching students by university instructors. Some studies have discussed it, but they were targeted toward students' use of social media in their learning. College students may not perceive social media in the same way that university instructors do, so we cannot refer to them. Thus, more studies should investigate the factors impact on the adoption using social media in teaching students.

Research Question 3: What demographic variables of university instructors in Saudi Arabia influence the future adoption decision of social media in teaching students?

The answer to this question was divided in two parts: First, the direct influence of demographic variables (age and gender) on university instructors' future adoption decision, and second, the influence of demographic variables on the five perceived characteristics in predicting university instructors' future adoption decision. In regard to the direct influence of demographic variables (age and gender) on university instructors' adoption decision, the two demographic variables (age and gender) combined were not statistically significant in predicting university instructors' future decisions of using social media in teaching students. Moreover, none of these demographic variables was a significant predictor by itself. In regard to the second part which focused on the influence of demographic variables on the five perceived characteristics in predicting university instructors' future adoption decision, the answer will be divided in two sections (gender, and age).

Gender. Findings show that all of the five characteristics combined (relative advantage, compatibility, complexity, trialability, and observability) of using social media in teaching were statistically significant in predicting male or female university instructors' future decision to use social media in teaching students. Rogers (2003) pointed out that the perceived attributes of an innovation can predict from 49% to 87% about its adoption. Findings show that the five characteristics combined explained 65% of the variance in male university instructors' adoption decision, whereas they explained 60% of the variance in female university instructors' adoption decision.

Of the five characteristics of using social media in teaching, relative advantage was the only significant predictor for female university instructors' adoption decision while compatibility was the only significant predictor for male university instructors' adoption decision. The rest of the five characteristics (complexity, trialability, and observability) were not significant predictors

for either gender. The increment of the perceived relative advantage was associated with the increment of the likelihood of female university instructors' future decision to use social media in teaching students. The increment of the perceived compatibility was associated with the increment of the likelihood of male university instructors' future decision to use social media in teaching students. An explanation for the nonsignificance of the perceived relative advantage for male university instructors may be attributed to a large number of current or past female users of social media compared to male university instructors (56% for female, and 45.7% for male) which make female university instructors experience its advantages more than male university instructors. An explanation for the nonsignificance of the perceived compatibility for female university instructors may be attributed to the prohibition of mobile devices in some of the female colleges. Alali (2015) mentioned that some universities or colleges have banned females from using smart devices inside campus. This may have impacted their perception toward the use of social media because they cannot break the rules. Interestingly, the female university instructors recorded higher mean than male university instructors for the item (female: 3.5, male: 3.1) "Using social media in teaching students is compatible with my university roles". Another explanation may be attributed to the prevention by some families of their female students to use social media, as a female university instructor stated in the open-ended question. This may have impacted their perception toward the use of social media because they respect the families' decisions. Rogers (2003) mentioned that an innovation's compatibility with sociocultural values and beliefs increases its adoption. It is worthwhile to mention that none of the previous studies investigated the influence of the university instructor gender on how they perceive social media in teaching students. Thus, future studies should address this.

Age. Findings show that all of the five characteristics combined (relative advantage, compatibility, complexity, trialability, and observability) of using social media in teaching were statistically significant in predicting two age groups of university instructors' (35 years and below or 36 and older) future decision to use social media in teaching students. Rogers (2003) pointed out that the perceived attributes of an innovation can predict from 49% to 87% about its adoption. Findings show that the five characteristics combined explained 71% of the variance in university instructors' (35 years and below) adoption decision, whereas they explained 56% of the variance in 36 and older university instructors' adoption decision.

Of the five characteristics of using social media in teaching, relative advantage and compatibility were the only significant predictors for the future adoption decision of university instructors in both age groups. The rest of the five characteristics (complexity, trialability, and observability) were not significant predictors for age group. The increment of the perceived relative advantage and compatibility was associated with the increment of the likelihood of the future adoption decision of university instructors in both age groups. However, the contribution of the perceived relative advantage and compatibility in the future adoption decision of university instructors aged 35 and below was higher than their contribution in the future adoption decision of university instructors aged 36 and older. It is worthwhile to mention that none of the previous studies investigated the influence of the university instructors' age in regard to how they perceive social media in teaching students. Thus, future studies should address this.

Rationale and Significance of the study

The rationale from this study emerged from the researcher's positive experience with social media in facilitating his learning. In addition, it emerged from the lack of educators' adoption of social media although they believe in its effectiveness (Alsaleh, 2015; Aifan, 2015)

with all of the support from the Ministry of Education (award.elc.edu.sa). It is worth noting that one-third of Saudi citizens are using social media with the highest number of YouTube and Twitter users per capita in the world (Perlov and Guzansky, 2014). The current literature indicates that there is a gap in investigating university instructors' adoption of social media, specifically in Saudi Arabia.

In terms of research, there are few research studies that discuss university instructors' adoption of social media in western culture countries. However, there is no research focused on university instructors' adoption of social media in Saudi Arabia. The Kingdom of Saudi Arabia differs from western culture countries in terms of culture, religion, and language. Yoo and Huang asserted the influence of culture in the acceptance of Web 2.0 and the selection of its types (Yoo and Huang, 2011). This study should enrich the literature on social media in higher education, which may help initiate further research in Saudi Arabia and other countries that share the same culture, such as Gulf Cooperation Council countries.

Moreover, this study should reveal potential current factors that influence the intent to adopt educational integration of social media by university instructors in Saudi Arabia. It should also indicate where university instructors in Saudi Arabia currently are in the adoption stages.

Limitation

There are five types of limitations in this study that should be mentioned: limitations related to research design, technical issues, reliability of data collection instruments, logistic regression in this study, and sample size. Further discussion of these limitations is in the following paragraphs.

Research design. This study is a cross-sectional study which concentrates on a population at a specific time. Cross-sectional studies are not appropriate in defining causes. Thus,

they should be repeated at another time (Cohen, 2000). Rogers (2003) stated that "Measuring the perceived characteristics of an innovation cross-sectionally at one point in time may provide only a partial picture of the relationship of such characteristics to an innovation's rate of adoption" (P.230). Another limitation is that this study does not identify what particular social media application has been used or is intended to be used. This study used types of social media rather than naming applications specifically.

Technical issues. A technical issue has been reported that should be mentioned here. Some participants emailed the researcher reporting their inability to click on the survey link. The researcher emailed the link again to all the participants who reported this issue. This technical issue may have caused some loss of participants' chance of responding.

Reliability of data collection instruments. When the researcher used Cronbach's alpha to measure the internal consistency of the survey, all the scales (combined and separated) scored high degrees of internal consistency, except the Trialability scale (by itself) which scored a low degree of internal consistency. Thus, results should be interpreted with caution.

Logistic regression in this study. Unequal responses to the question of future decision if using social media in teaching (87% decision to use and 13% decision not to use) may lead to inaccurate predicted responses, especially for participants who responded by decision not to use "No". Therefore, results should be interpreted with caution.

Sample size. It was planned for this study to run the logistic regression on all of the three groups of ages (35 years and below, 36 to 45 years, and 46 years and older). However, two age groups (36 to 45 years, and 46 years and older) were combined in order to have enough participants to run the logistic regression.

Implications for Instructional Design and Technology

Januszewski and Molenda (2008) defined Educational Technology as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (P.1). The word "technological" in the definition includes processes and resources. Resources are "the hardware and software entailed in teaching" (Januszewski and Molenda, 2008, P.11). In the past, educators harnessed silent films, sound films, audio recordings, radios, televisions, computers, and the Internet for educational purposes. The use of these inventions contributed to the improvement of teaching and learning (Januszewski and Molenda, 2008). Thus, the resources side is vital to the improvement of the Instructional Technology field. This study aimed to investigate the adoption of social media in teaching students by university instructors in Saudi Arabia. The results of this study suggest that designers when selecting teaching tools should consider their compatibility with the culture of the target audience. What might be acceptable in one culture may not be the same in another or at least on some people from the same culture. In other words, some instructional tools may violate cultural and social rules of the target audience. This is consistent with the definition of Educational Technology which ascertains the importance of ethical practice (Januszewski and Molenda, 2008). Moreover, Instructional Technology specialists should utilize the Diffusion of Innovation Theory in studying new ideas or tools that they want to integrate in instructional interventions. Moreover, they should explain the advantages and assure compatibility to the target audience. They should also train the target audience in using the new tools to reduce complexity, provide successful examples to increase observability, and provide chances for them to try these tools in order to increase acceptance.

Recommendations

There are seven recommendations for future studies. First, this study is a cross-sectional study which concentrates on a population at a specific time. Cross-sectional studies are not appropriate in defining causes. Thus, they should be repeated at another time (Cohen, 2000). "Measuring the perceived characteristics of an innovation cross-sectionally at one point in time may provide only a partial picture of the relationship of such characteristics to an innovation's rate of adoption" (Rogers, 2003, P.230). Future studies should replicate this study at different times in order to define the significant predictors for university instructors' future adoption decision. Second, future studies should use a mixed methodology in order to get rich data. Thus, future studies should use a survey for the quantitative part which will be helpful in defining the significant predictors. For the qualitative part, interviews should be used to get deep and rich results from university instructors who intend to use social media in teaching for the first time, university instructors who intend to continue the use of social media in teaching, and university instructors who intend to discontinue the use of social media in teaching. Interviewing university instructors who have different decisions may derive the reasons underlying these decisions. Third, future studies should replicate the same study in different cultures and compare the results. Rogers (2003) asserts the influence of culture on the adoption. The Cultural influence may affect acceptance of social media and selection of its types (Yoo and Huang, 2011). Fourth, future studies should investigate the adoption of specific social media applications. This study used types of social media which could not reveal clear images about the adoption of each application. Fifth, future studies should add more demographic variables which will may be helpful in expanding the knowledge about the impact of demographic variables on the adoption. It will be helpful to add experience and major variables. Sixth, future studies should study reasons behind

the nonsignificance of the perceived complexity, trialability, and observability of using social media in teaching students on university instructors' future adoption decision. Seventh, future studies should study what type of learning and teaching activities university instructors have used social media for and what type of social media they have used for each activity. Previous studies have mentioned that the effectiveness of social media in facilitating learning depends on the selection and proper use of social media based on pedagogical and environmental factors (Zgheib, 2014; Imlawi, Gregg, and Karimi, 2015; Ng'ambi and Lombe, 2012; Kassens-Noor, 2012; Irwin, Ball, Desbrow, and Leveritt, 2012). However, these studies were conducted in cultures that differ from Saudi culture.

Conclusion

Social media is one of the most prominent inventions of the twenty-first century. The government of Saudi Arabia considers the significance of social media in educating the Saudi community. This study answered the three research questions that focused on adoption of social media in teaching students by university instructors in Saudi Arabia. Findings of this study showed that 51.2% of the university instructors have used social media in teaching students, and 87% of the university instructors have decided to use social media in teaching students in the future. The findings of this study show that the Knowledge stage was the highest stage that university instructors have identified themselves with the stages of the innovation-decision, followed by Decision stage, Persuasion stage, Confirmation stage, and Implementation stage. The findings of this study imply that the perceived relative advantage and compatibility of using social media in teaching students may increase university instructors' (in general and for all ages) future adoption decision of using social media in teaching students. Moreover, the findings of this study imply that the perceived relative advantage of using social media in teaching

students may increase female university instructors' future adoption decision of using social media in teaching students, whereas the perceived compatibility of using social media in teaching students may increase male university instructors' future adoption decision of using social media in teaching students. Finally, the findings of this study imply that the perceived complexity, trialability, and observability of using social media in teaching students may have no influence on increasing university instructors' future adoption decision of using social media in teaching students.

APPENDIX A

THE INSTRUMENT

.

Section One: Demographic Information

This section asks about the characteristics of the university instructors. Please click on the box that describe your characteristics.

القسم الأول: معلومات أساسية

هذا القسم يسألك عن معلوماتك الأساسية كعضو هيئة تدريس. يرجى الضغط على الخيار المنطبق على شخصيتك.

. Please specify your gender?

الرجاء تحديد جنسك؟

Male ذكر

Female أنثى

Prefer not to answer أفضل عدم الاجابة

. Please specify your age

الرجاء تحديد عمرك

Adoption Decision Stages

.

Section Two: Adoption Decision Stages

This section asks you about your current situation in regard to the use of social media in teaching students. Please click on the box that best describes the extent that you would agree or disagree with for each statement.

القسم الثاني: مراحل قرار التبني

هذا القسم يسألك عن وضعك الحالي فيما يتعلق باستخدام وسائل التواصل الاجتماعي في تدريس الطلاب. يرجى الضغط على الخيار الأنسب الذي يعكس مدى موافقتك أو عدم موافقتك لكل فقرة.

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق	Strongl Agree وافق بشدة
I have heard about the use of social media in teaching students سمعت سابقاً عن استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I know how to use social media in teaching students أعرف كيف استخدم وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I understand the principles that underline how social media works in teaching students أفهم المبادئ الأساسية لكيفية استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I know what type of social media is the most appropriate in achieving my course goals. أعرف أي انواع وسائل التواصل الاجتماعي الأكثر ملائمة لتحقيق الأهداف الدراسية لمقرراتي.	○	○	○	○	○

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق	Strongl Agree وافق بشدة
I have a positive perspective about the use of social media in teaching students. لدي تصور إيجابي عن استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I anticipate a bright future of using social media in teaching students. أتوقع مستقبل مشرق لاستخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○

I intend to seek additional information about the use of social media in teaching students. أنوي البحث عن معلومات إضافية حول استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I intend to try the use of social media in teaching students. أنوي تجربة استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق	Strongl Agree وافق بشدة
I use social media in teaching students on a regular basis. استخدم وسائل التواصل الاجتماعي في تدريس الطلاب بشكل منتظم.	○	○	○	○	○
I search for additional information about the use of social media in teaching students. أبحث عن معلومات إضافية عن استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I recognize the benefits of using social media in teaching students. أدرك فوائد استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○
I promote the use of social media in teaching students to my colleagues. أشجع زملائي على استخدام وسائل التواصل الاجتماعي في تدريس الطلاب.	○	○	○	○	○

Current or Past Use

. Section Three: Current or Past Use of Social Media in Teaching Students

This section asks you whether or not you have used social media in teaching students. Please click on the box that describe your situation.

القسم الثالث: الاستخدام الحالي أو السابق لوسائل التواصل الاجتماعي في تدريس الطلاب

هذا القسم يسألك عن إذا ما كنت تستخدم أو سبق أن استخدمت وسائل التواصل الاجتماعي في تدريس الطلاب. يرجى الضغط على الخيار الذي يعكس وضعك.

. I have used social media in teaching my students

سبق وأن استخدمت وسائل التواصل الاجتماعي في تدريس الطلاب

Yes
نعم

No
لا

*. Check all social media types that you have used in teaching students (*You can choose more than one choice*):*

اختر جميع انواع وسائل التواصل الاجتماعي التي سبق وأن استخدمتها في تدريس الطلاب (بإمكانك اختيار اكثر من خيار واحد):

Social networking's (such as, Facebook, Google+, or LinkedIn)
الشبكات الاجتماعية (مثل: فيسبوك، قوقل بلس، أو لينكدن)

Blogs (such as, Blogger or WordPress)
المدونات (مثل: بلوقر، أو وورد بريس)

Wikis (such as, Wikipedia, Wikispaces, or PbWorks)
ويكي (مثل: ويكيبيديا، ويكي سبيس، أو بي بي وركس)

Media sharing (such as, YouTube, Instagram, Snapchat, Flickr, or Vine)
مشاركة الوسائط (مثل: يوتيوب، انتسجرام، سناب شات، فليكر، أو ڤاين)

Microblogs (such as, Twitter)
المدونات المصغرة (مثل: تويتر)

Podcasts (such as, Podcast, or Mixlr)
التدوين الصوتي (مثل: بودكاست، أو ميكسلر)

Perceived Characteristics

. Section Four: Perceived Characteristics About Using Social Media in Teaching Students

This section asks you about your personal perspective in regard to the use of social media in teaching students. Please click on the box that best describes the extent that you would agree or disagree with for each statement.

القسم الرابع: التصور حول خصائص استخدام وسائل التواصل الاجتماعي في تدريس الطلاب

هذا القسم يسألك عن تصورك الشخصي حول استخدام وسائل التواصل الاجتماعي في تدريس الطلاب. يرجى الضغط على الخيار الأنسب ال يعكس مدى موافقتك أو عدم موافقتك لكل فقرة.

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق
Using social media in teaching students increases student-instructor interactions استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يزيد التفاعل بين الطالب والأستاذ	○	○	○	○
Using social media in teaching students is effective in supporting students' learning process استخدام وسائل التواصل الاجتماعي في تدريس الطلاب فعال في دعم عملية التعلم لدى الطلاب	○	○	○	○
Using social media in teaching students decreases the dependency of students on the instructors استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يقلل من اعتماد الطلاب على الأستاذ في التعلم	○	○	○	○
Using social media in teaching students encourages students' acquisition of creativity skills استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يعزز اكتساب الطلاب لمهارات الإبداع	○	○	○	○

Using social media in teaching students encourages students' acquisition of solving problems skills استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يعزز اكتساب الطلاب لمهارات حل المشكلات	○	○	○	○
Using social media in teaching students encourages students' acquisition of critical thinking skills استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يعزز اكتساب الطلاب لمهارات التفكير الناقد	○	○	○	○
Using social media in teaching students encourages students' acquisition of collaborative learning skills استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يعزز اكتساب الطلاب لمهارات التعلم التعاوني	○	○	○	○

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق
Using social media in teaching students increases my productivity استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يزيد من إنتاجيتي	○	○	○	○
Using social media in teaching students eases achieving my courses goals استخدام وسائل التواصل في تدريس الطلاب يسهل تحقيق الأهداف الدراسية لمقرراتي	○	○	○	○
Using social media in teaching students saves my time and effort استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يوفر وقتي وجهدي	○	○	○	○
Using social media in teaching students promotes personalizing learning for students استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يساعد على مراعاة الفروقات الفردية بين الطلاب	○	○	○	○
Using social media in teaching students is compatible with my university's roles				

استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يتوافق مع قوانين جامعتي	○	○	○	○
Using social media in teaching students is compatible with the Saudi culture استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يتوافق مع الثقافة السعودية	○	○	○	○
Using social media in teaching students is compatible with my teaching method استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يتوافق مع طريقتي في التدريس	○	○	○	○

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق
Social media is compatible with my job's needs استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يتوافق مع احتياجات مهنتي التدريسية	○	○	○	○
Using social media in teaching students is compatible with 21st century educational methods استخدام وسائل التواصل الاجتماعي في تدريس الطلاب يتوافق مع الطرق التعليمية للقرن الواحد والعشرين	○	○	○	○
It is easy for me to create accounts in social media applications استطيع بسهولة إنشاء حسابات في تطبيقات وسائل التواصل الاجتماعية	○	○	○	○
It is easy for me to share content via social media استطيع بسهولة تبادل المحتوى مع الاخرين في وسائل التواصل الاجتماعية	○	○	○	○
It is easy for me to respond to students interactions استطيع بسهولة الرد على تفاعل الطلاب في وسائل التواصل الاجتماعية	○	○	○	○
I can deal with social media technical issues				

استطيع التعامل مع المشاكل التقنية في وسائل التواصل الاجتماعية	○	○	○	○
The effectiveness of using social media in teaching students is observable to me فاعلية استخدام وسائل التواصل الاجتماعي في تدريس الطلاب واضحة بالنسبة لي	○	○	○	○

	Strongly Disagree غير موافق بشدة	Disagree غير موافق	Neutral محايد/غير متأكد	Agree موافق
I have seen successful experiences about using social media in teaching students سبق وأن رأيت تجارب ناجحة لاستخدام وسائل التواصل الاجتماعي في تدريس الطلاب	○	○	○	○
I have seen the effectiveness of using social media in teaching students from my colleagues سبق وأن رأيت فاعلية استخدام وسائل التواصل الاجتماعي في تدريس الطلاب من قبل زملائي	○	○	○	○
I can try using social media in teaching students before deciding to adopt them استطيع تجربة استخدام وسائل التواصل الاجتماعي في تدريس الطلاب قبل ان اقرر تبني استخدامها	○	○	○	○
I have tried using social media in teaching students سبق وأن جربت استخدام وسائل التواصل الاجتماعي في تدريس الطلاب	○	○	○	○

Future Intent

. Section Five: Future Intent of Using Social Media in Teaching Students

This section asks you whether or not you intend to use social media in teaching students in the future. Please click on the box that describe your future intent.

القسم الخامس: نية خصائص استخدام وسائل التواصل الاجتماعي في تدريس الطلاب في المستقبل

هذا القسم يسألك عن إذا ما كنت تنوي في المستقبل استخدام وسائل التواصل الاجتماعي في تدريس الطلاب. يرجى الضغط على الخيار الذي يعكس نيتك في المستقبل.

. I will use social media in the future in teaching my students
سوف استخدم وسائل التواصل الاجتماعي في تدريس طلابي في المستقبل

Yes
نعم

No
لا

. *check all social media types that you intend to use in teaching students* (You can choose more than one choice):
اختر جميع انواع وسائل التواصل الاجتماعي التي تنوي استخدمتها في تدريس الطلاب في المستقبل (بإمكانك اختيار اكثر من خيار واحد

Social networking's (such as, Facebook, Google+, or LinkedIn)
الشبكات الاجتماعية (مثل: فيسبوك، قوقل بلس، أو لينكدن)

Blogs (such as, Blogger or WordPress)
المدونات (مثل: بلوقر، أو وورد بريس)

Wikis (such as, Wikipedia, Wikispaces, or PbWorks) **ويكي** (مثل: ويكيبيديا، ويكي سبيس، أو بي بي وركس)

Media sharing (such as, YouTube, Instagram, Snapchat, Flickr, or Vine)
مشاركة الوسائط (مثل: يوتيوب، انتسجرام، سناب شات، فليكر، أو ڤاين)

Microblogs (such as, Twitter)
المدونات المصغرة (مثل: تويتر)

Podcasts (such as, Podcast, or Mixlr)

التدوين الصوتي (مثل: بودكاست، أو ميكسلر)

Personal Reasons

.

Section Six: Personal Reasons for Future Non-Adoption Intent

You have chosen (in the previous section) that you will not use social media in teaching your students in the future, please write your personal reasons that leaded you to this choice.

القسم السادس: الأسباب الشخصية لعدم الرغبة بالاستخدام في المستقبل

لقد اخترت (في القسم السابق) أنك لا تنوي في المستقبل استخدام وسائل التواصل الاجتماعي في تدريس الطلاب، يرجى كتابة الأسباب الشخصية التي أدت إلى هذا الاختيار

. What are your personal reasons that lead you choose not to use social media in teaching your students?

ماهي الأسباب الشخصية التي جعلتك تختار عدم استخدام وسائل التواصل الاجتماعي في تدريس طلابك في المستقبل؟

Powered by Qualtrics

APPENDIX B

COVER LETTER FOR SURVEY RECRUITMENT

Dear university instructor,

I would like to invite you to participate in an online survey about investigating the adoption of social media in teaching students university instructors in Saudi Arabia. This survey is available in both Arabic and English languages. It will take approximately 10 - 15 minutes to complete this survey.

In order to participate, you must be a university instructor (professors, associate professors, assistant professors, lecturers, teaching assistants, and teachers) affiliated to any of the Saudi public universities. This study is entirely voluntary, so you may withdraw at any time. There is no compensation for participation. Your responses will be kept confidential and you will not be asked about your name in this survey.

· If you have any questions about participating in or learning more about this dissertation study, please reach me at ef8559 {at}wayne{dot}edu

If you fit the criteria, I would like to ask for your participation by following this link:
https://waynestate.az1.qualtrics.com/SE/?SID=SV_6tmVG8nbTdJyd3D

Thank you in advance for your participation.

Khalid Alasfor
Doctoral Candidate- Instructional Technology Program
Wayne State University

السلام عليكم ورحمة الله وبركاته،،،

أدعوكم للمشاركة في هذه الدراسة حول تبني أعضاء هيئة التدريس بالجامعات السعودية لوسائل التواصل الاجتماعي في تدريس الطلاب. هذه الاستبانة متوفرة باللغتين العربية والإنجليزية. لاستكمال هذه الاستبانة، تحتاج إلى ١٠-١٥ دقيقة.

لكي تشارك، يجب أن تكون عضو هيئة تدريس (أستاذ، أستاذ مشارك، أستاذ مساعد، محاضر، معيد، او مدرس) في أحد الجامعات السعودية الحكومية. مشاركتك في هذا الاستبيان تطوعية ولا يوجد أي تعويض للمشاركة، ويمكنك الانسحاب في أي وقت. علماً بأنه لن يتم طلب أي اسم من المشاركين أو المشاركات وسوف تحفظ جميع البيانات بكل سرية.

إذا كان لديك أية استفسارات حول المشاركة او معرفة هذه الدراسة، يرجى التواصل من خلال الايميل .
ef8559{at}wayne{dot}edu

للمشاركة في الاستبيان، يرجى الدخول من خلال هذا الرابط:

https://waynestate.az1.qualtrics.com/SE/?SID=SV_6tmVG8nbTdJyd3D

ولكم جزيل الشكر والتقدير،،،

خالد عبدالعزيز العصفور
تقنيات التعليم- جامعة وين الحكومية
الولايات المتحدة الامريكية

APPENDIX C

RESEARCH INFORMED CONSENT (English Version)

Title of Study: Social Media Adoption Among University Instructors in Saudi Arabia

Principal Investigator (PI): *Khalid Alasfor*
Instructional Technology
313 977 2981

Purpose

You are being asked to be in a research study of social media adoption among university instructors in Saudi Arabia because you are an instructor in on of the Saudi Arabian universities. This study is being conducted at Wayne State University. **Please read this form and ask any questions you may have before agreeing to be in the study.**

This research study aims to investigate the adoption of social media in teaching students university instructors in Saudi Arabia. This study may help in identifying the current situation of social media adoption among university instructors in Saudi Arabia. Moreover, it may reveal current potential factors that influence their intent of adoption.

Study Procedures

If you agree to take part in this research study, you will be asked to complete an online survey related to this study about the adoption social media among university instructors in Saudi Arabia for teaching students. Your participation in this study is entirely voluntary and you can withdraw at any time. There is no compensation for your participation. You need 10-20 minutes to complete the survey and your responses will be kept confidential. You will be asked to provide some basic demographic information (age and gender), your current situation of social media adoption, your perspective of the characteristics of teaching students with social media,

and your intent to use social media in the future in teaching students. Social media means sites such as Instagram, Twitter, YouTube, Facebook, Blogger, and Wiki. The survey must be completed in one sitting; it cannot be saved and returned to later.

Benefits

As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks

There are no known risks at this time to participation in this study.

Study Costs

Participation in this study will be of no cost to you.

Compensation

There is no compensation for participating in this research, but your information will help in this research as it will produce new results about the use of social media in higher education.

Confidentiality

All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You have the right to choose not to take part in this study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time.

Questions

If you have any questions about this study now or in the future, you may contact Khalid Alasfor at the following phone number 313 977 2981 or through email ef8559{at}wayne{dot}edu. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

Consent to Participate in a Research Study

By completing the survey, you are agreeing to participate in this study. Participation in this research is for university instructors (professors, associate professors, assistant professors, lecturers, teaching assistants, instructors, and teachers) affiliated to any of the Saudi public universities; if you are not a university instructor affiliated to a Saudi public university, please do not complete this survey.

Do you agree to participate in this study?

☐ Yes

APPENDIX D

RESEARCH INFORMED CONSENT (Arabic Version)

عنوان الدراسة: تبني وسائل التواصل الاجتماعي من قبل أعضاء هيئة التدريس بالجامعات السعودية.

الباحث الرئيس: خالد العصفور
تقنيات التعليم
٣١٣٩٧٧٢٩٨١

الغرض:

مطلوب منك المشاركة في هذه الدراسة حول تبني أعضاء هيئة التدريس بالجامعات السعودية لوسائل التواصل الاجتماعي في تدريس الطلاب لكونك عضو هيئة تدريس في أحد الجامعات السعودية الحكومية. تجرى هذه الدراسة في جامعة وين الحكومية في الولايات المتحدة الأمريكية. **أقرأ هذا النموذج من فضلك وأسأل أي سؤال لديك قبل الموافقة على هذه الدراسة.**

هذه الدراسة تهدف إلى استقصاء تبني أعضاء هيئة التدريس بالجامعات السعودية لوسائل التواصل الاجتماعي في تدريس الطلاب. هذه الدراسة قد تساعد في معرفة الوضع الحالي حول تبني أعضاء هيئة التدريس بالجامعات السعودية لوسائل التواصل الاجتماعي في تدريس الطلاب. علاوة على ذلك، قد تساهم هذه الدراسة في كشف العوامل المحتملة التي تؤثر حالياً على نية التبني.

إجراءات الدراسة:

إذا وافقت على المشاركة في هذه الدراسة، سيتطلب منك إكمال استبانة متعلقة بهذه الدراسة والتي حول تبني أعضاء هيئة التدريس بالجامعات السعودية لوسائل التواصل الاجتماعي في تدريس الطلاب. مشاركتك في هذا الاستبيان تطوعية ولا يوجد أي تعويض للمشاركة، ويمكنك الانسحاب في أي وقت. علماً بأنه لن يتم طلب أي اسم من المشاركين والمشاركات وسوف تحفظ جميع البيانات بكل سرية. سيتم سؤالك عن بعض المعلومات الديموغرافية (الجنس، العمر)، وضعك الحالي من حيث تبني وسائل التواصل الاجتماعي في تدريس الطلاب، تصورك عن تعليم الطلاب بواسطة وسائل التواصل الاجتماعية، وعما إذا كنت تنوي استخدام وسائل التواصل الاجتماعي في المستقبل في تدريس الطلاب. وسائل التواصل الاجتماعي هي مواقع او تطبيقات مثل: انستجرام، تويتر، يوتيوب، فيس بوك، وويكي. الاستبيان يجب ان يستكمل في جلسة واحدة ولا يمكن حفظه والرجوع إليه لاحقاً.

الفوائد المتوقعة لهذا البحث:

قد لا يوجد فائدة مباشرة لك لمشاركتك في هذه الدراسة. لكن نتائج هذه الدراسة قد تفيد أشخاص آخرين في الوقت الحالي أو في المستقبل.

المخاطر:

لا يوجد مخاطر معلومة في الوقت الحالي للمشاركة في هذه الدراسة.

التكلفة:

لا يوجد تكلفة مادية مترتبة عليك للمشاركة في هذه الدراسة.

التعويضات:

مشاركتك في هذه الدراسة تطوعية ولا يوجد تعويضات للمشاركة في هذه الدراسة. ولكن مشاركتك في هذه الدراسة ستساهم في الحصول على نتائج جديدة حول استخدام وسائل التواصل الاجتماعي في التعليم العالي.

الخصوصية:

جميع المعلومات المجموعة عنك في هذه الدراسة سيتم التعامل معها بأمان وسرية ولن يتم الإفصاح عنها كما انه لن يطلب ذكر اسمك.

الانسحاب\طوعية المشاركة:

مشاركتك في هذه الدراسة تطوعية، كما انه بإمكانك الانسحاب في أي وقت. بالإضافة الى حرية الإجابة عن الأسئلة التي ترغب بالإجابة عنها. لديك الحق في اختيار عدم المشاركة في هذه الدراسة.

الاستفسارات:

إذا كان لديك أي سؤال عن هذه الدراسة في الوقت الحالي أو في المستقبل، بإمكانك التواصل مع خالد العصفور عن طريق الاتصال على الرقم (2981 977 313 1+) او عن طريق البريد الالكتروني ef8559{at}wayne{dot}edu. إذا كان لديك اي سؤال او استفسار حول حقوقك كمشارك في الدراسة، يمكنك التواصل مع رئيس مجلس أخلاقيات البحوث العلمي على الرقم (1628 577 313 1+). إذا لم تستطع التواصل مع العاملين، او اردت التحدث الى شخص اخر غير العاملين في المجلس، يمكنك الاتصال بالمختصين بمجال البحوث في جامعة وين الحكومية على الرقم (5771628 313 1+) لمناقشة المشاكل، او الحصول على على معلومات.

الموافقة للمشاركة في هذه الدراسة:

استكمالك للاستبيان يعني موافقتك على المشاركة في هذه الدراسة. لكي تشارك، يجب أن تكون عضو هيئة تدريس (أستاذ، أستاذ مشارك، أستاذ مساعد، محاضر، معيد، او مدرس) في أحد الجامعات السعودية الحكومية. إذا لم تكن عضو هيئة تدريس في أحد الجامعات السعودية الحكومية، يرجى عدم اكمال هذا الاستبيان.

هل توافق على المشاركة في هذه الدراسة؟

☐ نعم

APPENDIX E

IRB APPROVAL

WAYNE STATE UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://irb.wayne.edu

CONCURRENCE OF EXEMPTION

To: Khalid Alasfor
College of Education

From: Dr. Deborah Ellis FOR C. Zalondek, PhD/RM
Chairperson, Behavioral Institutional Review Board (B3)

Date: July 26, 2016

RE: IRB #: 066416B3X
Protocol Title: Social Media Adoption Among University Instructors in Saudi Arabia
Sponsor:
Protocol #: 1606015045

The above-referenced protocol has been reviewed and found to qualify for **Exemption** according to paragraph #2 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Revised Social/Behavioral/Education Exempt Protocol Summary Form (received in the IRB office 7/12/2016)
- Research Protocol (received in the IRB Office 6/22/2016)
- Medical Records not being accessed therefore HIPAA does not apply.
- Research Informed Consent - English & Arabic
- Email - English & Arabic
- Data Collection Tool: Survey - English & Arabic

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to the potential benefits.

- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://irb.wayne.edu/policies-human-research.php).

NOTE: Forms should be downloaded from the IRB Administration Office website http://irb.wayne.edu at each use.

Notify the IRB of any changes to the funding status of the above-referenced protocol.

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ABSTRACT

SOCIAL MEDIA ADOPTION AMONG UNIVERSITY INSTRUCTORS IN SAUDI ARABIA

by

KHALID ALASFOR

December 2016

Advisor: Dr. Monica Tracey

Major: Instructional Technology

Degree: Doctor of Philosophy

There is an orientation from the government of Saudi Arabia toward social media in general. The government of Saudi Arabia considers the significance of social media in educating the Saudi community. The Saudi Ministry of Education founded the National Center for E-Learning and Distance Learning (NCeL) because it considered the importance of e-learning and distance learning for higher education (he.moe.gov.sa). NCeL supports and rewards university instructors to integrate social media in the learning process (award.elc.edu.sa). Moreover, Saudi students indicated positive attitudes toward social media in their learning and would prefer attending classes that university instructors use social media (Aifan, 2015). However, the adoption of social media for teaching students by university instructors in Saudi Arabia is unclear.

A questionnaire was built based on Rogers' Diffusion of Innovations theory for the study purpose. 387 university instructors from all of the 28 Saudi public universities responded to the questionnaire. 47.5% of the participants were male university instructors, while 51.7% were female university instructors. .8% of the participants preferred not to disclose their gender.

47.8% of the participants were 35 years old or below, 29.2% were between 36-45 years old, and 17.8% were 46years old and more.

The results of this cross-sectional descriptive study that the Knowledge stage was the highest stage that university instructors have identified themselves with the stages of the innovation-decision, followed by Decision stage, Persuasion stage, Confirmation stage, and Implementation stage. The findings of this study imply that the perceived relative advantage and compatibility of using social media in teaching students may increase university instructors (in general and for all ages) future adoption decision of using social media in teaching students. Moreover, the findings of this study imply that the perceived relative advantage of using social media in teaching students may increase female university instructors' future adoption decision of using social media in teaching students, whereas the perceived compatibility of using social media in teaching students may increase male university instructors' future adoption decision of using social media in teaching students. Finally, the findings of this study imply that the perceived complexity, trialability, and observability of using social media in teaching students may have no influence on increasing university instructors' future adoption decision of using social media in teaching students.

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