

Factors Influencing the Adoption of E-Leader: An Empirical Field Study of Jordanian Banks

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Doi:10.5296/ijhrs.v4i3.6198

URL: <http://dx.doi.org/10.5296/ijhrs.v4i3.6198>

Abstract

Recently, managers in the banking industry face challenges in leading employees who are geographically dispersed. The e-leader approach to leadership represents a solution to this challenge because it allows leaders to use technology to implement leadership processes. This research used data obtained from bank managers in Jordan to test a model of e-leader adoption derived from the Technology Acceptance Model (TAM). 240 questionnaires were distributed to managers with 216 returned; however, 193 of the returned questionnaires were used for the purpose of this study. The findings provided support for the proposition that perceived usefulness, perceived ease of use, reliability, and responsiveness influence attitudes towards e-leader adoption. The findings also showed that these five variables accounted for almost half of the variance in attitude towards e-leader adoption. A positive attitude towards e-leader adoption accounts for a substantial amount of the variance in actual e-leader adoption.

Keywords: Perceived usefulness, Perceived ease of use, Reliability, and Responsiveness, Attitudes, e-leader.

1. Introduction

E-leader is generally defined as the use of electronic technologies to conduct many of the processes associated with leadership (DasGupta, 2011). These leadership processes involved the ability of the leader to influence others to adopt a common vision of the future and to take the actions necessary to implement the vision. The adoption of e-leader is becoming increasingly important in business because of the geographic dispersion of work teams and the proliferation of electronic technologies (Colfax, Santos, & Diego, 2009). Using electronic technologies to lead, however, may require changes in the traditional leadership processes that developed for face-to-face interactions between leaders and followers (Chamkiotis & Panteli, 2011).

The construct of the e-leader is relatively new and has not been widely researched despite recognition that the adoption of the e-leader paradigm is becoming more common (Avolio,

Sosik, Kahai, & Baker, 2014). The leaders in organizations that have geographically disbursed workers may be at a competitive disadvantage unless they learn to use new technologies to influence followers. Nonetheless, there is a lack of a theoretical model concerning e-leader adoption that can provide guidance when using information technology for leadership processes.

The purpose of this research was to test a model of e-leader adoption by examining data obtained from managers in the banking industry in Jordan. The banking industry is relatively rapid to adopt new technologies and new uses for existing technologies because of competitive pressures and the trend towards globalization and consolidation (Luo, Li, Zhang, & Shim, 2010). The perspectives of managers in the industry are indicative of the perspectives of managers in other industries that are driven by technological change.

2. Literature Review

Researchers have only recently begun exploring the theoretical implications of the concept of the e-leader who must exert influence on followers through electronic systems (Colfax, Santos, & Diego, 2009). While researchers have recognized for more than a decade the use of technology to implement leadership process such as communications, a formal model for the use of technology in leadership has not been fully developed (Avolio, Kahai, & Dodge, 2001; Potosky & Lomax, 2014). In addition, the traditional models of leadership do not fully explain the differences in leadership processes with the e-leader model (Zigurs, 2003). As a result, there is a substantial gap in the leadership literature concerning the way that technology affects leadership processes (Avolio, et al., 2014; Potosky & Lomax, 2014). Nonetheless, there is evidence that the e-leader model allows leaders to maintain direct contact with a larger number of followers in organizations through the use of computer-mediated communications (Hanna, 2007).

Previous research has noted that leadership methods vary significantly when leader and followers are not collocated (Chamkiotis & Panteli, 2011). The variation is because the use of electronic media adds an additional factor into the process with both leaders and followers required to use the media in a similar manner (Cummings, 2008). In addition, the lack of face-to-face interactions requires the leader to initiate technology-mediated interactions with followers (Liu & Batt, 2010). According to Bansal (2008), a change in specific techniques to communicate with people does not alter the fundamental social processes associated with leadership.

Research by Neufeld, Wan, and Fang (2010) determined that perceived effectiveness of communications among followers accounts for a large amount of variance in perceptions of effectiveness of leaders. With the e-leader model, the perception of the quality of communications systems influences the decision to use the system. In practice, both leaders and followers have to accept the use of computer-mediated communications in a leadership dyad for the process to be effective (Avolio, Walumba, & Weber, 2009). In addition, a leader mandating that a follower use a particular type of technology for communication does not result in effective leadership communications if there is resistance to the use of the technology (Schepers, Wetzels, & de Ruyter, 2005).

One approach to explaining the process of adopting e-leader methods is the technology acceptance model (TAM), which proposes that the intention to use a technology is the best

predictor of actual use of the technology (Turner, Kitchenham, Brereton, Charters, & Budgen, 2010). The model further proposes that perceived usefulness of the technology and perceived ease of use are the key antecedent variables affecting attitudes toward the technology (al-Gahtani, 2011). Attitude determines the intention to use the technology. At the same time, a variety of factors can influence the perception of usefulness and perceived ease of use including social pressures, prior experience with the technology, and compatibility between the technology and a task (Gazizadeh, Lee, & Boyle, 2012; Vannoy & Palvia, 2010). Researchers using the TAM approach, however, suggest that the model can incorporate variables other than perceived usefulness and perceived ease of use by assuming that these other factors have a significant effect on attitude and use of a technology (Legris, Ingham, & Colletette, 2003).

The universal technology acceptance and use theory (UTAUT) incorporates a wider range of variables than the TAM by adding social influence and facilitating conditions as independent variables (Alwaihashi & Snasel, 2013). Social influence involves the subjective norms of a group towards the technology while the facilitating conditions include available resources and perceived reliability and responsiveness of the technology (Venkatesh, Morris, & Davis, 2003). Researchers often use the UTAUT model because it examines more factors in the technology use decision (Alsheri, Drew, Alhussain, & Alghamdi, 2012).

3. Conceptual Framework of the Study

Based on previous studies and the general TAM construct, the research formulated a conceptual framework to assess e-leader adoption. The model proposes the four independent variables of perceived ease of use, perceived usefulness, reliability, and responsiveness. Attitude is an intermediate variable while e-leader adoption is the dependent variable. The model expands the traditional TAM approach by adding the two additional variables of reliability and responsiveness.

3.1 Relationship between leaders' attitude and intention to use e-leader:

A positive attitude toward a technology is the key variable leading the use of a technology. Some research also that attitude and behavioral intention are a single construct (Alsajjan & Dennis, 2010). Attitude, however, is influenced by numerous antecedent variables. Attitude, however, is influenced by numerous antecedent variables such as ability to use the technology, cognitive abilities, and belief that the technology is necessary for a specific purpose. Many of these variables affecting attitude are subjective and depend on the perspective of the individual user. The attitudes towards technology are constantly evolving in response to changes in the antecedent variables such as acquiring more knowledge about how the technology functions or discovering new uses for the technology (Bhattacharjee & Premkumar, 2004). In the e-leader model tested, attitude is the primary predictor of the intention of leader to use technology to facilitate leadership processes. The model also proposes that the four antecedent variables of perceived ease of use, perceived usefulness, reliability, and responsiveness influence the attitude toward and the intention to use the technology.

3.2 Relationship between perceived ease of use and leaders' attitude:

The independent variable of perceived ease of use refers to the degree that an individual subjectively believes that using a technology will be free of effort (Yaghoubi & Bahmani, 2010). Factors such as prior knowledge about similar technologies and cognitive skills affect this perception that the technology is easy to use, with these factors functioning as antecedent variables affecting the perceived ease of use of the technology (Saade & Bahli, 2005). At the same time, the perception of the ease of use moderates the effect of other variables on attitude (Legris, Ingham, & Collerette, 2003). If individuals believe that the technology is difficult to use, they will have a negative attitude toward the technology even if they believe that the technology would be useful in specific situations, reliable, and responsive. In addition, a lack of perceived ease of use undermines the motivation to use the technology because of the assumption that the effort to learn the technology will be greater than the reward from its use. There can be substantial individual differences in perceived ease of use because of variability in individuals' knowledge and skills. In the e-leader model, the perceived ease of use has a direct influence on attitudes towards using technology for leadership processes.

3.3 Relationship between perceived usefulness and leaders' attitude:

The independent variable of perceived usefulness is the subjective belief that the technology will be useful for performing a specific task that the user desires to accomplish (Yousafzai, Foxall, & Pallister, 2010). The perception of usefulness affects the attitude toward the technology, which subsequently affects the intention to use the technology. Antecedent variables such as enjoyment in using the technology and the specific goals for the technology affect the perceptions of the usefulness of the technology (Yi & Hwang, 2003). These antecedent variables can change depending on the situation with the possibility that individuals selectively determine if a technology is useful in a specific situation. In effect, the perception of usefulness of the technology can vary with an individual considering a technology useful for one purpose and not for others. In the context of the e-leader model, the perceived usefulness of technology for implementing leadership process in a specific situation has a direct effect on attitude. Leaders will be more likely to use e-leader technology if they believe that it is useful for influencing followers in a specific situation. Factors such as the characteristics of followers can influence the perceptions of the leader concerning usefulness of the technology.

3.4 Relationship between reliability and leaders' attitude:

The independent variable of reliability refers to the subjective perception that the technology is sufficiently trustworthy to use for important undertakings (Van Biljon & Kotze, 2007). The reliability of the technology depends on factors such as continuous availability and operability. There is also evidence indicating that the belief in the quality of information or interactions provided by the technology is an important contributing factor for reliability (Or & Karsh, 2009). Reliability is also a subjective variable that depends on the perceptions of the users of the technology rather than objective estimates of reliability. If leaders believe that e-leader technology is reliable they will be more likely to have a favorable attitude toward the use of the technology for communication and for influencing followers. This perception of

reliability can consist of a general estimate of reliability as well as an estimate of reliability for a specific type of task or leadership process. The inclusion of reliability in the e-leader model implies that it is a moderator of attitude that has a similar effect as perceived ease of use and perceived usefulness, which are the traditional components of the TAM.

3.5 Relationship between responsiveness and leaders' attitude:

The independent variable of responsiveness is the willingness of individuals to use the technology to perform some type of process. Research in the context of e-commerce has demonstrated that the technology must respond to inputs from consumers for the consumer to use an online platform for transactions (Ha & Stoel, 2009). For example, a consumer will respond to a request for payment information only if convinced that the security on the platform can provide the desired level of protection. In the e-leader model, responsiveness is the willingness of followers to respond to the leaders relying on the technology for communication and other leadership processes (Pasaoglu, 2011). This variable recognizes that leadership is a dyadic relationship with the follower required to take some actions in response to a leader. With the e-leader model, the technology mediates the response to the leadership process. The inclusion of responsiveness in the model is based on the assumption that it has a direct effect on attitude that is equal to the effect of perceived ease of use and perceived usefulness.

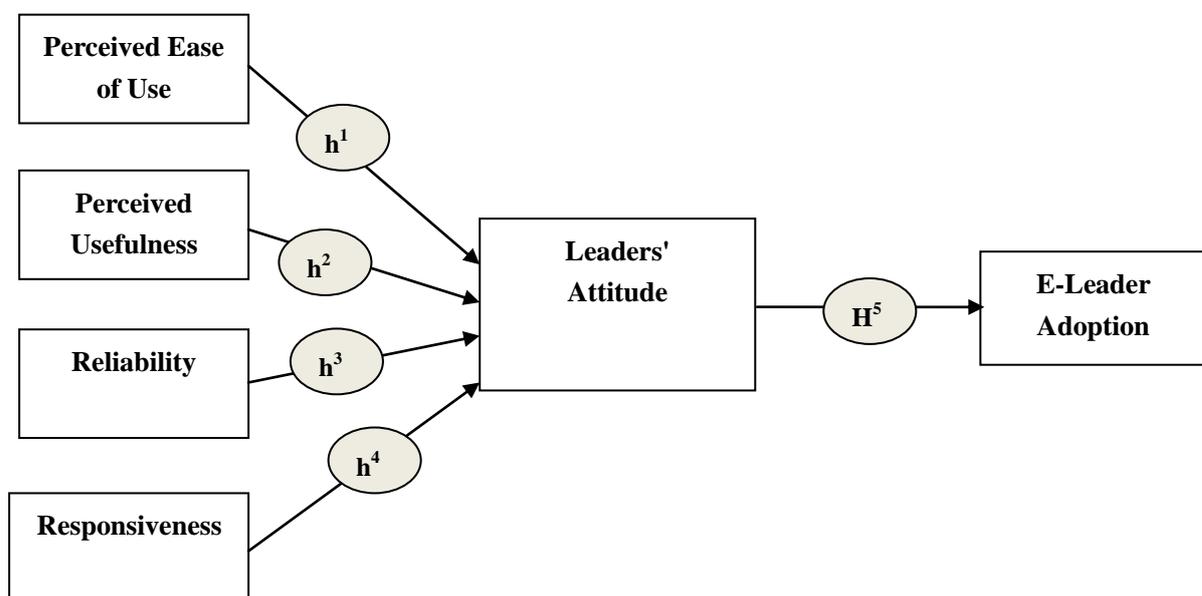


Figure 1: Conceptual Model

3.6 Hypothesis of the study:

The hypotheses of the study are intended to test the propositions concerning the relationships of the theoretical model. The hypotheses of the study are as follows.

H1: Perceived ease of use positively influence leaders attitude.

H2: Perceived usefulness positively influence leaders' attitude.

H3: Reliability positively influence leaders' attitude.

H4: Responsiveness positively influence leaders' attitude.

H5: Leaders' attitude positively influences e-leader adoption

4. Materials and Methods

4.1 Data Collection:

A structured questionnaire was used to collect the data necessary for testing the hypotheses of this study. The questionnaire was disseminated to managers in the banking industry in Jordan with participation in the study fully voluntary. Moreover, the questionnaire was adopted and modified to meet the study need see table 1. A total of 240 questionnaires were sent to managers with 216 returned, which is a response rate of 90%, which suggests that the potential for non-response bias in the findings is small (Peytchev, 2013). Of the returned questionnaires, 193 were valid for research. This sample size produces a confidence interval of 7 with a confidence level of 95% for a study population of unknown size. As a result, the sample size was adequate for the purposes of testing the hypotheses of the study.

4.2 Instruments:

The data collection instrument is an intention quality survey questionnaire designed for the purposes of this study, The questionnaire consisted of sections that collected data concerning the dimensions of the independent variables of perceived ease of use, perceived usefulness, reliability, and responsiveness, the intermediate variable of attitude, and the dependent variable of e-leader adoption. The variables were measured using a 5-item Likert scale asking respondents to rate their agreement with various questions. The scale is generally accepted as means to provide interval data useful for inferential statistical analysis (Carifio & Perla, 2007).

5. Results and Discussion

5.1 Factor Analysis:

Exploratory factor analysis was used to establish the validity of the survey questionnaire, which was based on the five dimensions of ease of use, usefulness, reliability, responsiveness, attitude, and e-leader adoption. The findings considered only those factors with a loading of $\leq .50$ as recommended by Rummel (1988). The results of the factor analysis are shown in Table 1.

Table 1: Factor Analysis on the e-leaders intension quality questionnaires

Dimension and items	Factor loading	Resource
Ease of use		Yaghoubi & Bahmani, (2010)
I find it easy to interact with others through e-leader	.815	
I find it easy to communicate with others through e-leader	.822	
My interaction with others through e-leader would be clear and understandable	.819	
Usefulness		
Using e-leader improve the quality of my work	.652	Yousafzai, Foxall, & Pallister, (2010)
E-leader enable me to accomplish tasks more quickly	.805	
E-leader support critical aspects of my job	.823	
Using e-leader enhance my effectiveness on the job	.866	
Reliability		
E-leader produces comprehensive and reliable information.	.827	Van Biljon & Kotze, 2007
E-leader provide me with a reliable and clear information	.768	
E-leader information is accurate and reliable	.617	
E-leader precise information that I need	.723	
Responsiveness		
E-leader contents is appropriate to others requirements	.843	Pasaoglu, (2011)
An automated or human e-leader response gives others prompt services.	.792	
E-leader responses are relevant and accurate.	.883	
Attitude		
Using e-leader is a good idea	.749	Alsajjan & Dennis, (2010)
Using e-leader is beneficial for management purpose	.794	
Using e-leader in organizations enhance decision making	.822	
Using e-leader makes improve communication	.842	
E-leader Intention to Use		
I intend to use e-leader because it gives me a greater control over my work	.806	Venkatesh, Morris, & Davis, (2003)
I intend to use e-leader because it reduces the time I spend on unproductive activities	.791	
I intend to use e-leader because it makes it easy to do my job	.868	
I intend to use e-leader because it helps me to increase my productivity	.796	

5.2 Reliability Analysis:

The reliability of the measurements in the survey questionnaire was assessed using Cronbach's alpha. The test was conducted on each of the six dimensions assessed by the questionnaire. The alpha coefficient exceeded the level of .70 for the scales in each dimension assessed by the instrument, which is considered the minimum level of reliability internal consistency of a scale (Adams & Lawrence, 2014). Table 2 shows the results of the reliability analysis.

Table 2: Reliability analysis

Contract	Number of items	Alpha coefficient
E-leader	4	.872
Attitude	4	.815
Ease of use	3	.842
Usefulness	4	.852
Reliability	4	.830
Responsiveness	3	.860

5.3 Demographic Profile of the Respondents:

The survey respondents were 57.7% male and 42.3% female. The largest age group of respondents was between 31 and 39 years old (46.8%), which was followed by respondents between 40 and 49 years old (26%). Most of the respondents also had a bachelor's degree (65.4%). A majority of the respondents held managerial position in their banks (63.4%). Table 3 shows the demographic data from the survey questionnaire.

Table 3: demographic characteristics of respondents (N = 193)

Variables	Percentages	Cumulative (%)
Gender		
Male	57.7	57.7
Female	42.3	100.0
Age		
< 31	18.1	18.1
31- 39	46.8	64.9
40 – 49	26	90.9
50 – 59	7.6	98.4
> 60	1.5	100.0
Education level		
Diploma	15.9	15.9
Bachelor	65.4	81.4
Postgraduate	18.6	100.0
Position		
Manager	63.4	63.4
Supervisor	36.6	100.0

5.4 Hypothesis Testing:

Multiple regression analysis was used to evaluate the effect of the five dimensions of usefulness, ease of use, reliability, responsiveness and attitude on the dependent variable of e-leader adoption, with the data used to test the hypotheses of the study. The level of significance for each independent variable was $<.05$ in the multiple regression analysis. The β coefficient for each of the variables assessed had a positive sign, which indicates that these variables have a positive influence on e-leader adoption. Table 4 presents the results of the multiple regression analysis.

Table 4: Results of Multiple Regression Analysis

Model	Standardized Coefficient (β)	t-value	Sig
Constant	-	6.470	.000
Reliability	.436	5.967	.000
Usefulness	.326	4.459	.000
Ease of Use	.190	2.660	.008
Responsiveness	.184	2.275	.024

$R^2=.477$; F-value = 116.124; Adjusted $R^2= .470$; Significance= 0.00

The analysis shows that the most important contributor to leaders' attitude was reliability with usefulness as the second most important contributor. The R^2 value (.477) also indicates that the model accounts for 47.7% of the total variance in attitude. The results from the multiple regression analysis provide support for accepting the first four hypotheses of the study.

A simple regression analysis was used to assess the impact of attitude on e-leader adoption. The results of the analysis are shown in Table 5, which indicates that leaders' attitude towards the use of technology for leadership processes affects e-leader adoption. The value of R^2 (.413) shows that the leaders' attitude toward the technology accounts for 41.3% of the variance in e-leader adoption. The results provide support for accepting hypothesis 5.

Table 5: Results of Simple Regression analysis

Model	Standardized Coefficient (β)	t-value	Sig.
Constant	-	6.470	.000
Attitude	.432	9.695	.000

$R^2=.413$; F-value = 92.124 Adjusted $R^2= .410$; Significance= 0.00

6. Discussion

The results of the research provide support for accepting all five of the hypotheses of the study, which are shown in Table 6. The findings indicate that the variables of perceived ease of use, perceived usefulness, reliability, and responsiveness have a substantial influence on

the attitude of leaders towards the use of technology to perform leadership processes. The attitude of leaders, which is influenced by the antecedent variables, positively influences e-leader adoption.

Table 6: Summary of results in relation to the research hypotheses

No. Hypothesis	Finding
H1: Perceived ease of use positively influence leaders attitude.	Supported
H2: Perceived usefulness positively influence leaders' attitude.	Supported
H3: Reliability positively influence leaders' attitude.	Supported
H4: Responsiveness positively influence leaders' attitude.	Supported
H5: Leaders' attitude positively influences e-leader adoption.	Supported

The findings with respect to perceived ease of use and perceived usefulness are consistent with the findings of other researchers examining the propositions of the TAM (al-Gahtani, 2011; Vannoy & Palvia, 2010). Of particular importance for explaining the factors supporting e-leader adoption is the finding concerning the significance of reliability. A leader is likely to use an electronic approach to influence followers only if the leader perceives the technology as trustworthy and dependable. This finding is consistent with the findings of van Biljon and Kotze (2007) concerning the importance of the perception of reliability as an independent variable affecting attitudes toward the technology. The findings also indicate that the perception of responsiveness is a significant variable influencing attitude toward a technology, but the influence of this variable is relatively weak in comparison to the other variables. The findings also emphasize the importance of attitude in e-leader adoption. This finding is consistent with the general proposition of the TAM indicating that attitude influences intention to adopt a technology, which in turn affects the actual use of the technology (Turner, et al. 2010).

When the e-leader adoption model is considered as a whole, it suggests that it is possible for organizations to take measures to improve e-leader adoption. The model indicates that fostering a positive attitude towards the e-leader paradigm will facilitate adoption of technology to perform leadership processes. Taking steps to improve the attitude of leaders towards the use of technology is fundamental for e-leader adoption. Because the perception of reliability accounts for a substantial amount of the variance in attitude toward the technology, organizations should focus on ensuring that their information technology systems can support uninterrupted communications between leaders and their followers. Organizations with a geographically dispersed workforce can also emphasize the usefulness of technology for managers to exert leadership influence over employees. The model also demonstrates that it is necessary to ensure that leaders have the skills necessary to operate e-leader technologies, which positively affects the perception that the technology is easy to use.

7. Limitations and future research:

A limitation in the study was the use of a sample population consisting of managers in Jordanian banks. Factors within the banking industry in this nation could affect the

perceptions of this population concerning e-leader adoption. Future research should broaden the sampling to leaders in other industries and from other nations. Because the banking industry is becoming increasingly globalized and managers are often faced with the challenge of leading international teams, future research should also examine the effect of cultural variables on e-leader adoption.

8. Conclusion

The findings of the study support the conclusion that organizations can promote e-leader adoption by influencing the attitude of leaders towards the use of technology for leadership processes. Some of the measures that can improve attitude include information about the usefulness of e-leader methods for managing geographically dispersed teams, training to ensure that managers have skills to use the technology, and investment in information technology systems to enhance reliability.

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