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FACTORS AFFECTING THE ADOPTION OF MARKET WATCH LIVE PROGRAM AT THE AMMAN STOCK EXCHANGE BY USERS IN JORDAN

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Abstract:

This study aims to investigate the factors affecting the adoption of the market watch live program in Jordan, as it is one of the developing countries interested in the dissemination of electronic services, including the market watch live program. Where 424 questionnaires were analyzed using the Structural Equation Modeling- SEM approach. The factors (individual characteristics, technical environmental factors, demographic factors, usage obstacles, usage opportunities) were adopted as independent variables. The study concluded that all these factors have an impact in the adoption of users in Jordan for the market watch live program as a dependent variable. The study suggested several recommendations that would enhance users in Jordan demand for the market watch live program, which the e-government in Jordan seeks to provide to investors to help them make their appropriate investment decision.

Keywords: Market Watch Live Program, smartphones, Amman Stock Exchange, Jordan.

1. INTRODUCTION:

Smartphones are used in various services, including voice and short messages (SMS), the Global Positioning System (GPS), and (Bluetooth) technology, in addition to being used in more complex functions and applications. These applications and programs that users deal with to run their businesses has become a daily reality. For example, according to the Pew Internet and American Life Project, affiliated to the Pew Research Center; 69% of adults in the United States have at least one health application installed - weight, diet, or exercise application.

"We live in the culture of applications" (Do et al, 2011) where everything is available on applications (work, home, health and entertainment), and on the other hand, developing countries are interested in spreading electronic services through various applications. Jordan is one of these countries through the Market Watch Live Program on the smartphone, where investors and those interested in the securities traded at the Amman Stock Exchange can follow up on their investments on a daily and direct basis. The program provides many advantages and services that help investors make their appropriate investment decision (Jordan - the

The Seybold Report
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official website of the e-government). According to the website of the Amman Stock Exchange, the launch of this program is a constant concern to enhance transparency and disclosure in the capital market, and to improve and develop the level of services provided to investors at the Amman Stock Exchange. In the report of the World Health Organization in 2011, the developing countries - including Jordan - are not lagging in the level of smartphone usage, and according to the report, developing countries reached 77%, while developed countries reached 86%, in addition to the huge growth in the usage of smart phones; the main reason is the relatively low cost.

Al-Ananba (2018) concluded that there are high motivations among Jordanian University students to use smart phones and the reasons for its spread are high, which may indicate the tendency of Jordanian society to use smart phones and the applications available on them to obtain various information.

2. THEORETICAL FRAMEWORK AND STUDY LITERATURE

In recent years, the use of smartphones has increased dramatically, until it reaches developing countries that are characterized by their technology problems and have major concerns in important installations. These countries have experienced a sudden increase in smart phone use; For example, the number of smart phone users reached 4.68 billion and their number is expected to exceed 5 billion in 2020. According to the statistics available at the end of 2016, there were 2.1 billion smart phone users worldwide, which is about 91% of all people who use mobile phones (Statista Global Consumer Survey, 2021). A smart phone is a mobile phone that contains additional functions similar to personal digital assistant devices (Gill et al, 2012). In this digital age, it has become imperative for all developed and developing countries to support its capabilities, especially competitive capabilities, by adapting to the new electronic environment (Nasri, 2015).

With the advent of smartphones or other mobile devices, there was a limited number of applications, it included popular categories such as games, music, social networks, news, weather, and maps (navigation), After that, it developed more and became more expanding and important in many areas such as health care, telecommunications, banking (financial), shopping, productivity, and lifestyle (Statista Global Consumer Survey, 2017). Davis (1993) explained that behavioral models are research tools to determine the success or failure of a new (technological) system, and he explained why users accept or reject the adoption process, and based on several studies (Cocosila, 2013) and (Deng et al, 2014) and (Dwivedi et al, 2016) and (Al-Shahrani, 2019), the most important factors for adopting a new technology application on smartphones are:

1. **Individual (personal) characteristics:** Which can be represented as resistance to change, self-efficacy, perceived risk, perceived benefit, technical (technological) anxiety. Guo (2013) showed that resistance to change arises from a perceived lack of usefulness, and that technical anxiety arises is caused by how easy or difficult the application is to use, Jeon and Park (2014) found the higher the self-efficacy, the lower the concern about perceived usefulness.

The Seybold Report
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2. **Technical environmental factors:** These are social impact, price, awareness, and privacy risks. Akter et al, (2013) indicated that the quality here can be measured by comparing the expected with the actual, this is done by measuring the level of application use on users' phones, in terms of stability and increase in the number of users or decrease in their number. Here it is necessary to highlight the risks of privacy and confidentiality of the financial information of the users.
3. **Demographic factors**: the most important ones are age and gender, in general, most of the previous studies showed that demographic factors did not have a significant impact on the adoption and use of applications on smartphones, but Deng et al, (2014) study found that older age groups have greater resistance to change compared to middle groups. This may be since the middle and young aged groups are more familiar with modern electronic and digital technologies and applications.
4. **Usage obstacles:** There are obstacles to using smartphone applications such as misinformation that misleads users' decisions, and the prices of smartphones, and the prices of the applications. Perhaps the most important obstacle for Jordanian users, as a society of developing countries, is the relatively high prices of smartphones for low- and middle-income people.
5. **Usage opportunities:** the most important of these opportunities is the ease of use represented by the rapid access of information to the users of the applications, and consequently, this is reflected in the speed of making appropriate decisions, As well as the existence of the advantages of comparisons between data that may not be available without the use of applications or need time to obtained and to perform comparisons in order to enhance the decision-making process.

According to the reports of the Telecommunications Regulatory Commission, cellular service subscriptions in Jordan recorded about 7.24 million subscriptions at the end of September 2020, and more than 90% of the total phone users use smartphones, and it also reported that the number of Internet subscriptions in Jordan with its various fixed and smart technologies at the end of the third quarter of 2020 has reached more than 7.8 million, including 7.2 million subscriptions to mobile Internet (smartphones).

3. THE STUDY PROBLEM

Although the establishment of the Amman Stock Exchange was at the end of the seventies of the last century, the trading of shares in Jordan was before that and since the beginning of the thirties of the last century. The trading volume at that time was about 286 million Jordanian dinars, while in 2016 it reached about 17 billion Jordanian dinars, in addition to the number of companies that increased from 66 to 224 Shareholding company. (Amman Stock Exchange website). Considering the facts and statistics mentioned above, the importance of the study is highlighted to know the factors affecting the adoption of the market watch live program in the Amman Stock Exchange by Jordanian users. It is also important to mention that there has been little research on this topic in the Arab region and especially in Jordan, which indicates the

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need to understand and study the main factors that affect the behavioural intent to adopt the market watch live program by Jordanian users. The main challenge for any applications is how to attract people to accept and adopt them, especially in developing countries. One of these applications or programs in Jordan as a developing country is the market watch live program, with the continued acceleration of mobile technology innovations. Therefore, such programs and applications facilitate access to the necessary information and details of financial trading in the Amman Stock Exchange. So that this information is more convenient for making the right decisions at the right time.

Thus, the main question of the study can be formulated as follows:

What are the factors that affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users?

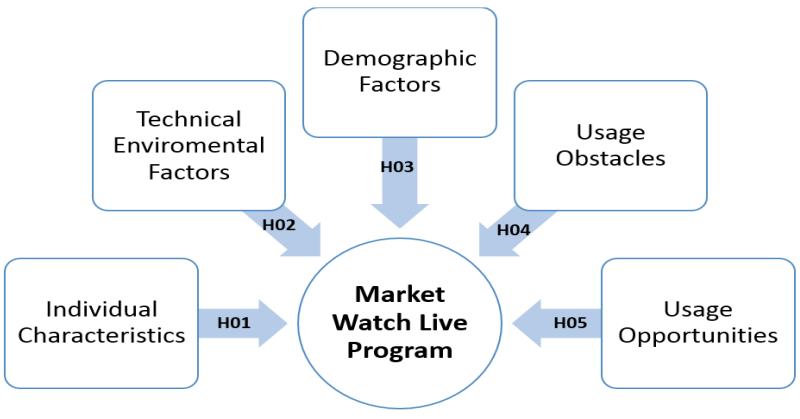
4. STUDY METHODOLOGY

Structural Equation Modelling-SEM approach was used to analyze the data collected for this study. Data was collected for this study by developing a questionnaire as a main source for this purpose, as this tool is considered the best for field survey by providing the ability to reach the largest number of users and in different places (Bhattacherjee, 2012). About the study sample, an appropriate sample of Jordanians was taken from different cities in Jordan (North, Central, and South) and the reason for choosing the appropriate sample is due to the lack of a complete list of all Jordanians interested in smartphones that can help in using any kind of probability sampling methods.

5. STUDY FRAMEWORK AND HYPOTHESES

Based on the factors of adopting a new technical application on smartphones, the study model can be shown as in the following Figure (1):

Figure No. (1): Study framework



The study hypotheses can be formulated as follows:

ISSN 1533-9211

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H01: There is no effect of individual characteristics on the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.

H02: There is no effect of technical environmental factors (represented in privacy) on the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.

H03: There is no effect of Demographic factors on the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.

H04: There is no effect of Usage obstacles (represented by smartphone prices) on the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.

H05: There is no effect of Usage opportunities on the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.

6. DATA ANALYSIS AND RESULTS DISCUSSION

Structural Equation Modeling Analysis (SEM) was chosen as a statistical method to test the study hypotheses. According to this analysis and the study model and its variables, there is an urgent need for a sample size of at least 200 answers (Kline, 2011). Therefore, the study questionnaire was distributed to the study population and the answer of a sample consisting of 424 respondents. The distribution rates of respondents in Jordanian cities were in the following descending order (the middle 62.4%, the south 22.9%, and the north 14.7%).

Table No. (1): The demographic characteristics of the study sample

Category		Respondents (N)= 424	Percentage
Gender	Male	223	52.6
	Female	201	47.4
	Total	**424**	**100**
Age	<18	19	4.4
	18-25	135	31.8
	26-35	176	41.6
	36-45	45	10.7
	46-65	26	6.0
	>65	23	5.5
	Total	**424**	**100**
Education level	High school	54.0	12.9
	diploma	70.0	16.4
	Bachelors	216.0	51.0
	Postgraduate	84.0	19.7
	Total	424	100
Region	Middle	265	62.4
	South	97	22.9
	North	62	14.7
	Total	**424**	**100**
Smartphone usage	Less than a year	4	0.3
	1-2 years	14	3.6
	2-3 years	19	2.7
	More than 3 years	387	93.4
	Total	**424**	**100**

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It can be seen that there is parity (almost) between male and female respondents, most of them hold a first university degree (Bachelor's), most of the respondents are stationed in the central region, Also, most respondents have owned smartphones since three years or more. This is reflected positively on the suitability of the study sample to achieve its objectives and test its hypotheses.

Table No. (2): Fit Statistics of the Study Model

Fit Index	Value	Standard Fit Index
CMIN/DF	3.014	≤3.000
GFI	0.908	≥ 0.90
AGFI	0.812	≥ 0.80
NFI	0.941	≥ 0.90
CFI	0.951	≥ 0.90
RMSEA	0.059	≤ 0.08

According to the table No.2, it is found that each fit statistics index has met the requirement condition, which is more than the cut-off value (Standard Fit Index).

Table (3): Constructs Reliability

Factors	Cronbach's alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Individual characteristics	0.90	0.903	0.700
Technical environmental factors	0.93	0.911	0.775
Demographic factors	0.87	0.851	0.661
Usage obstacles	0.80	0.814	0.595
Usage opportunities	0.84	0.849	0.589
R^2	59.6%		

In the construct reliability test table (3) Cronbach's alpha, composite reliability (CR) and Average variance extracted (AVE) were used for each construct, Cronbach's alpha was checked using SPSS, it should be >0.70, (CR & AVE) tested with AMOS 21 should be >0.70 and >0.50 sequentially, and all constructs were found to be within the recommended level as shown by (Hair et al, 2010). Also, R^2 was 59.6%.

The Seybold Report
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Table No. (4): Factor Analysis of the Factors of Adopting the Use of Smartphone Applications *

Factors	Item	Factor Loading	AVE	Square Root of AVE
Individual characteristics	1	0.844	0.700	0.836
	2	0.858		
	3	0.88		
	4	0.764		
Technical environmental factors	1	0.843	0.775	0.880
	2	0.892		
	3	0.915		
	4	0.933		
	5	0.648		
Demographic factors	1	0.885	0.661	0.813
	2	0.887		
	3	0.744		
	4	0.655		
Usage obstacles	1	0.825	0.595	0.772
	2	0.825		
	3	0.652		
Usage opportunities	1	0.851	0.589	0.767
	2	0.69		
	3	0.876		
	4	0.617		

* The Kaiser rule was adopted, so that the minimum limit for adopting the item was 50%, when the Eigen value is (1) and more.

Table (5): Discriminant Validity test

	Individual characteristics	Technical environmental factors	Usage obstacles	Usage opportunities	Demographic factors
Individual characteristics	0.836				
Technical environmental factors	0.676	0.880			
Usage obstacles	0.001	0.009	0.857		
Usage opportunities	0.386	0.584	0.192	0.767	
Demographic factors	0.292	0.267	0.169	0.291	0.813

The structural model of the study was examined to test the research hypotheses. The structural model consists of (6) paths between independent factors (external factors) and a dependent factor (internal factor) as shown in Table (6),Where the standard regression estimates were stated by examining the direct effect of the independent variables on the dependent variable, the level of significance depends on the critical ratio (Critical Ration - CR) for the regression estimate; When the (CR) values are greater than (2.58), this indicates an acceptable level of significance, as explained by (Byrne, 2010), so the study assumes that the entire hypotheses are acceptable.

The Seybold Report
ISSN 1533-9211
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Table No. (6): Results of the Consolidated Estimates of the Structural Model

Default path	Standard Estimate	CR	P-value	Statistical significance
Demographic factors - Adoption of the Trading Monitoring Program	0.213	2.856	***	There is an effect
Usage Opportunities - Adoption of Trading Monitoring Program	0.564	2.856	***	There is an effect
Individual Characteristics - Adoption of Trading Monitoring Program	0.118	4.527	0.004	There is an effect
Technical Environmental Factors Adoption of Trading Monitoring Program	0.205	2.751	***	There is an effect
Usage obstacles - Adoption of the Trading Monitoring Program	0.097	3.739	0.016	There is an effect

7. RESULTS

- The study model consists of six paths to explain the relationship between six external (independent) structures (individual characteristics, technical environmental factors,
- demographic factors, Usage obstacles, Usage opportunities) and an internal (dependent) factor (adopting the Market Watch Live Program).
- Individual characteristics positively affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.
- Technical environmental factors represented by privacy positively affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.
- Demographic factors positively affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.
- Usage obstacles represented by smart phone prices positively affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.
- Usage opportunities positively affect the adoption of the market watch live program at the Amman Stock Exchange by Jordanian users.
- The structural model was able to reach an acceptable level of predictability in the internal factor (adopting the Market Watch Live Program) by about 60%, depending on the value of R^2.

8. RECOMMENDATIONS

Privacy risks must be emphasized, as users of applications must be reassured about the confidentiality of their information and data, especially financial ones, so that their rights and duties are clarified in a way that makes them reach a stage of reassurance that makes them accept the terms and conditions contained in the applications. There are also other factors that explain about 40% of the factors of adopting the market watch live program, which were not taken in this study. The researchers recommend conducting studies on them to find out their effects on the use of smartphone applications, including resistance to change, anxiety about

The Seybold Report
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Technology, laws and legislations to protect users of smart phone applications and programs, fun motivator, privacy and confidentiality).

References:

- Alananbah, A. A., (2018), "The Role of Mobile Phones in Reducing the University of Jordan's Students Reliance on Printed Press", Zarqa Journal for Research and Studies in Humanities, Vol. 18, No. 3, pp. 528-542.
- Alshhrany, H., (2019), "The factors affecting the intention of the students of King Khalid University towards the use of the wattage app as one of these means in supporting the educational process in Saudi Arabia. UTAUT", Educational Journal, Issue 64, College of Education, King Khalid University, (pp. 184-218).
- Nasri, W., (2015), "Internet Banking Adoption in Tunisia", Jordan Journal of Business Administration, University of Jordan, Vol. 11, No. 3, pp. 669-683.
- Akter, S., D'Ambra, J., & Ray, P., (2013), "Development and validation of an instrument to measure user perceived service quality of Health". Information and Management, Vol. 50, No 4, pp. 181–195.
- Alalwan, A. A., Dwivedi, Y. K., Rana, N. P. P., & Williams, M. D., (2016), "Consumer adoption of mobile banking in Jordan", Journal of Enterprise Information Management, Vol. 29, No. 1, pp. 118–139.
- Bhattacherjee, A., (2012), "Social science research: Principles, methods, and practices". (2nd Ed.). Florida, USA:
- Anol Bhattacherjee Marzano, L., Bardill, A., Fields, B., Herd, K., Veale, D., Grey, N., & Moran, P., (2015), "The application of Health to mental health: opportunities and challenges", 2(October).
- Byrne BM., (2010). "Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming", (2001). Testing for Multi group Invariance Using AMOS Graphics: A Road Less Traveled. Structural Equation Modeling. 11(2):272-300.
- Cocosila, M. (2013). Role of user a priori attitude in the acceptance of mobile health: An empirical investigation. Electronic Markets, Vol. 23, No. 1, pp. 15–27.
- Davis, F. D. (1993). User Acceptance of Information Technology. Journal of man-Machine studies, Vol. 13, No. 3, pp. 318-339
- Deng, Z., Mo, X., & Liu, S. (2014). Comparison of the middle-aged and older users' adoption of mobile health services in China. International Journal of Medical Informatics, Vol. 83, No. 3, pp. 210–224.
- Gill, P. S., Kamath, A., & Gill, T. S. (2012). Distraction: an assessment of smartphone usage in health care work settings. Risk Management and Healthcare Policy, Vol. 5, pp. 105–114.
- Guo, X., Sun, Y., Wang, N., Peng, Z., & Yan, Z. (2013). The dark side of elderly acceptance of preventive mobile health services in China. Electronic Markets, Vol. 23, No. 1, pp. 49–61.
- Hair Jr., J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2010). Multivariate data analysis: A global perspective. (7th Ed.). Pearson Education International.
- Jeon, E., & Park, H.-A. (2015). Factors Affecting Acceptance of Smartphone Application for Management of Obesity. Healthcare Informatics Research, Vol. 21, No. 2, pp. 74.
- Jewer, J. (2018). International Journal of Medical Informatics Patients' intention to use online postings of ED wait times : A modi fi ed UTAUT model, Vol. 112, pp. 34–39. https://doi.org/10.1016/j.ijmedinf.2018.01.008
- Kline, R. B. (2011). Methodology in the Social Sciences. Principles and practice of structural equation modeling (3rd ed.). Guilford Press.

ISSN 1533-9211

DOI 10.5281/zenodo.7323040

- Minh, T., Do, T., Blom, J., & Gatica-perez, D. (2011). Smartphone Usage in the Wild: a Large-Scale Analysis of Applications and Context. ICMI '11 Proceedings of the 13th International Conference on Multimodal Interfaces, 353–360.
- World Health Organization. (2011). mHealth: New horizons for health through mobile technologies. Observatory, 3(June), 66–71.
- https://www.who.org
- https://portal.jordan.gov.jo
- https://www.trc.gov.jo
- https://www.ase.com.jo
- https://www.statista.com
- https://www.statista.com/statistics/274774/forecast-of-mobile-phone-users-worldwide/