“Factors and issues affecting electronic insurance adoption in an emerging market”

AUTHORS	Maen F. Nsour Samer A. M. AL-Rjoub Mohammad Tayeh Husam Kokash

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Maen F. Nsour (Jordan), **Samer A.M. AL-Rjoub** (Jordan), **Mohammad Tayeh** (Jordan), **Husam Kokash** (Saudi Arabia)

FACTORS AND ISSUES AFFECTING ELECTRONIC INSURANCE ADOPTION IN AN EMERGING MARKET

Abstract

This study examines the factors and issues affecting the adoption of electronic insurance (EI) in the Jordanian insurance sector. The methodology of the study is based on convenience sampling, thus, the sample consists of 175 respondents familiar with E-services, with different backgrounds, professions, businesses, income groups, sectors, and regions. Questionnaires were distributed and disseminated electronically using SurveyMonkey. The study employs both descriptive and ANOVA analyses to analyze the responses. The results show that EI promotes sustainability, reduces costs, saves time and holds some operational benefits beneath. The ANOVA results show that the impact of income and age on sustainability, cost-effectiveness, and operational benefits is significant at least at the 5% significance level. Respondents are also aware that EI may involve issues and challenges related to security and privacy, customer-related issues such as lack of knowledge about repositories, and insurer-related issues such as data shifting. The ANOVA results indicate that gender affects customers' perceptions of EI adoption regarding customer-related issues; its effect is significant at the 5% level of significance. On the other hand, age and income level are important factors that shape respondents' perceptions of EI in Jordan. Age is only significant for security-related issues, and income level is a deciding factor in insurer-related issues; their effect is strong and highly significant at the 5% and 1% levels, respectively.

Keywords insurance, customer awareness, sustainability, cost-effectiveness, operational benefit, security-related issues, insurer-related issues

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Maen F. Nsour, Ph.D., President and CEO, Arab Potash Company, Amman, Jordan.

Samer A. M. AL-Rjoub, Ph.D., Professor of Finance, Department of Banking and Finance, Hashemite University, Zarqa, Jordan.

Mohammad Tayeh, Ph.D., Associate Professor of Finance, Department of Finance, School of Business, The University of Jordan, Amman, Jordan. (Corresponding author)

Husam Kokash, Ph.D., Associate Professor of Marketing, Marketing Department, College of Business Administration, Prince Sultan University, Saudi Arabia.

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INTRODUCTION

The insurance sphere is one of the fastest-growing sectors and has gradually developed into an essential component of the financial services sector in Jordan. The insurance sector's net profits increased significantly in 2018 compared to 2017, with a growth rate of 352.4% (Jordan Insurance Federation, 2018). As one of the prominent sectors in Jordan, the insurance sector realized the importance of E-business (EB), specifically electronic insurance (EI), to create stronger relationships with business partners and suppliers. Companies in the insurance industry, therefore, need to enter the EB competition or lose an essential part of the commercial center. The importance of EB also has been well documented in reports by the US government and independent organizations (Afande, 2015). E-business enhances the process of selling and buying products by the firm and the consumer, affecting insurance companies' overall performance. EB brings several opportunities for companies and customers by allowing companies to have more access to new unexploited markets, overcome distance, work together with governments, and contribute to value chains (business to business). On the other hand, due to competition, customers will have access to goods

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and services at lower prices, be better informed, and gain access to more secure technology (Maragia, 2016). The adoption of EI in Jordan is a hot topic and emerges nowadays but is still premature and evolves at slower rates. How management effectively uses modern technology to optimize existing processes is one of the value-enhancing opportunities that will separate the winners from the losers in the future (Puelz, 2010).

Furthermore, technology has infiltrated every element of the insurance sector. Information technology (IT) can no longer be considered a support function, managed as a leading organization by the traditional chief information officer (CIO). The next five years will witness IT functions disintegrate entirely into a new business body structure. Insurers' technology operating models will embrace this shift from centralized "traditional functions" to "technology enabled" models and ultimately to "federated" models where technology is a core part of every business function managed as an enterprise asset. Global insurers, however, are all struggling with incorporating emerging technologies, adopting modern ways of conducting business, and being genuinely customer-centric while staying in business. Insurance technology functions must keep the business operating, managing the inherent complexity and increasing imperfection of the current status, and meeting demands for change from the business and regulatory and constitutional requirements (KPMG, 2018).

Although more and more insurers are using the Internet to offer standard policies (such as auto, home, life, health) at deep discounts, as well as providing comprehensive online insurance contracts and free comparisons of available policies, many people do not trust the impersonal insurance contract on the Internet and seek to take advantage of reduced premiums (Turban et al., 2002). The challenge, therefore, is dual for customers and insurers, and this sector in Jordan must move fast from traditional insuring to technology-oriented businesses by adopting new ways of conducting business. Although the IT and Internet infrastructure growth rate is very fast, the insurance sphere in Jordan is still in the first steps of adopting EI, even though the well is menacing.

EI adoption, however, might be affected by certain factors that determine the shape of the current and future insurance industry. Adopting direct contact technology might hold beneath its challenges and might be faced by customers' reluctance, fear, and uncertainty. The digital era brought significant changes in the insurance industry to the extent that buying insurance is done with one click, and soon, most people will be part of EI. With EI, customers can manage all their policies under a single account, such as the dematerialization account (DMT) principle for holding a stock certificate. Customers no longer need to be concerned about losing insurance documents due to physical hazards or changing the insurance repository if unsatisfied with the services; all policies are available on one platform digitally stored in secure electronic format. This highlights the importance of examining the determinants of EI adoption in the Jordanian insurance sector.

1. INSURANCE SECTOR IN JORDAN

The Jordanian Insurance sector was established under the first insurance law in 1965, after which the number of players continued to grow, and the sector went through structural changes. In 1989, for example, the Jordan Insurance Federation (JIF) was created mainly to help regulate and coordinate insurance practices, unify insurance policies, and establish insurance and reinsurance pools as required by the market. In 1999, under the Insurance Supervision Act number 33 for 1999, the Insurance Commission was created "as an independent entity responsible for regulating the insurance sector".

The current structure of the insurance sphere in Jordan consists of 24 operating firms: one company specializes in life insurance, eight others – in general insurance, and the remaining 15 – practice both types of insurance. According to Central Bank of Jordan, (2016): "the consolidated balance sheet of insurance firms for 2016 expanded by JD 27.5 million (3.3 percent), compared to its level at

the end of 2014, to reach JD 869.7 million". In addition, the collected premiums of insurance firms in 2016 increased by JD 32.5 million (5.9 percent) to reach JD 582.9 million. The collected motor insurance premiums constituted 38.8 percent of the total premiums, followed by medical insurance at 29.4 percent. As for other insurance types, fire (12.8 percent), life (12.0 percent), maritime (3.5 percent), and general accidents (3.5 percent). Profits of the insurance sector increased sharply in 2018 compared to 2017, with a growth rate of 547.8%. The insurance sector will soon start operating under the Central Bank of Jordan (CBJ) supervision to regulate the sector more and control the level of risk. According to Jordinvest (2016): "general insurance makes up a sizeable 88.9% of total insurance premiums written in Jordan"; on the other hand, the life insurance market is significantly smaller. Insurance premiums in Jordan are heavily weighted in favor of motor and medical insurance, followed by fire insurance followed by life insurance (Jordan Insurance Federation, 2018; Central Bank of Jordan, 2016, 2017).

The major reasons behind the growing insurance sector in Jordan are the following eight reasons: economic growth, growing population, large youth population, rising income, more risk awareness, regulatory reforms, and the adoption of "takaful" in Islamic finance operations.

2. LITERATURE REVIEW AND HYPOTHESES

As a response to the fast growth in technology and internet connectivity, many firms around the globe have invested heavily in e-commerce. This technology, however, has the ability to make a radical transformation in industrial sectors regardless of sector-related or geographical-related constraints (Hinton & Barnes, 2005). Therefore, the adoption of e-commerce by different sectors such as E-Education, E-Banking, E-Healthcare, etc. has attracted the attention of researches to investigate the challenges, opportunities, and factors that affect the adoption of E-commerce (Salehi & Alipour, 2010; Keivani et al., 2013; Raghunath & Panga, 2013; Phichitchaisopa & Naenna, 2013; Tripathi & Khan,2016; Waseem et al., 2019; Chapagai, 2022; Khan, 2022).

Although the insurance industry took a part in the process of adopting EI, it still lagging behind other financial sectors (Arora, 2003), especially the banking sectors, besides very few studies have examined the adoption of EI for insurance firms. For example, Arora (2003) argues that the insurance industry did not adopt e-commerce although considerable resources have been directed towards improving information technology in this industry. Aarabi and Bromideh (2006) emphasize that "this may be due to many systems, databases, and networks are incompatible; hence, the insurance sector has problems sharing data. This, however, could be solved by including building links between supply chains and a system that enables an insurer to obtain underwriting data from information suppliers". Yao (2004) also finds similar problem in New Zealand where e-commerce uptake is relatively slow in insurance industry although the industry is well located to exploit e-commerce. The insurance industry only employs the internet to distribute information, with few companies offering online transactions. However, considerable scope remains for further development of website features.

In contrast, the number of insurance firms in US that are planning to perform internet technology is increasing as a result of expected benefits. Lee and Cata (2005), for example, examine the critical success factors that could affect the performance of e-insurance for 109 US Auto and life insurance companies. They found that customer pressure, organizational support, website availability, a firm's age and size, integration of the business, and e-business plan are the factors that affect the performance of e-insurance. They also find that insurance firms realize more tangible and intangible benefits through online sales.

In addition, Puelz (2010) shows that the use of technology (online channel) by US insurers has significant effect on keeping customers and improving revenues, but it has less impact on cost reduction. The adoption of online channels results in increasing the number of transactions performed by insurers. Hossinpour et al. (2014) also examine the impact of using technology on insurance firms' performance. They find a significant relationship between e-marketing and the sales of life and investment insurance. This relationship has been proven in all three dimensions of e-marketing; the

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use of the internet for activities related to distribution channels, clients and marketing research.

From the other perspective, Bromideh (2012) examines the factors that might affect customer E-readiness to embrace EI in Iran. The results show that age and human interaction negatively affects customer E-readiness, while ease of use, role clarity, income, education, and image of technology are positively influence factors. In similar vein, Sapa et al. (2014) examine the benefits and barriers of information and communication technology (ICT) on insurers and customers. Regardless of the barriers to applying e-insurance, the results showed that e-insurance resulted in reduced costs, improved marketing and goodness of information, enhanced relationships with different partners, attracted new customers, and increased revenues. Afande (2015) shows both technological and managerial factors affecting the implementation of e-business in Kenyan insurance sector. Pahuja and Chitkara (2016) explore users' perceptions of EI and examine the factors that could affect the application of EI. Their main findings are that sustainability, cost efficiency, and operational synergies are the major factors influencing EI adoption in India. Other factors such as security issues, customer orientation, and issues related to insurers affect customers' perceptions of their engagement with EI. Stankovic et al. (2022) examine the effect of IT and digitalization on the insurance sector in Serbia and identified the factors that affect e-insurance adoption. They find that environmental and organizational factors statistically affect the attained level of e-insurance implementation. In contrast, only the insurance company's market share positively affects the odds of adopting e-insurance.

To follow the pace of technological growth, Jordan has put a lot more emphasis on infrastructure and technology, therefore, the information and communication technology (ITC) sector provides the required infrastructure, secure and sufficient, to businesses across the country so that they can digitally transform the economy. This focus on technology has a considerable impact on businesses in Jordan as they want to stay competitive (Alshamaileh et al., 2017; AbuAkel & Ibrahim, 2022). Despite the emergence of e-commerce in the Jordanian economy, little attention has been given by the empirical research to the adoption of e-commerce. A few notable exceptions include Anouze and Alamro (2019) who examine the factors that predict the behavioral intention and adoption of e-banking of Jordanian customers, and Jaradat et al. (2022) who investigate the factors affecting the decision regard the adoption of Business intelligence and its influence on decision making process.

As far as the previous review of literature tells, the knowledge about the factors that affect the adoption of EI and the challenges that could be faced by the Jordanian insurance sectors is very limited, as studies that examine and investigate this issue are virtually nonexistent. This study, therefore, fills this gap by identifying and empirically examining the main factors predicting the behavioral intention and adoption of EI on the part of Jordanian customers. Such a study can also significantly contribute to the scarce insurance literature by showing the essential aspects that Jordanian insurance customers consider when deciding whether or not to use EI. As a result, insurance management will receive a guidance on how to design and market EI as a self-service technology.

To achieve this objective, this study explores users' perceptions of EI and their awareness of this concept by testing the following hypotheses:

H_{01}: *Demographic variables (Age, Gender, and Income Level) do not influence respondents' perceptions of different factors affecting EI adoption.*

H_{02}: *Demographic variables (Age, Gender, and Income Level) do not influence the respondents' perception of different issues/challenges in using EI.*

Both hypotheses are tested against the alternative hypothesis of the existing effect of demographic variables on respondents' perceptions.

3. METHODS

Primary data was collected through a well-structured survey that consisted of two sections. The first section (A) is four questions about the demographic profile of the respondents. The second section (B) of the survey contains 34 statements

on a five-point scale, out of which 20 statements concentrated on different factors influencing the implementation of EI, namely: sustainability (seven statements), cost-effective (eight statements) and operational benefit (included five reports). The remaining 14 statements reflect different issues and challenges facing the adoption of EI, which include security-related issues (four statements), customer-related issues (four statements), and insurer-related issues (six statements). To examine the factors affecting the adoption of EI, the questionnaire of Pahuja and Chitkara (2016) is adopted.

This study is descriptive and quantitative; data analysis is performed using various statistical tools, including cross-tabulation, percentages, and means. The study is conducted in Jordan's main cities, namely Amman, Sult, Irbid, and Zarqa. A total of 187 respondents were included in this study. The respondents were from different backgrounds, professions, businesses, income groups, sectors, and regions. Information is collected from respondents on characteristics (age, gender, monthly household income, and geographical region). Questionnaires were distributed and disseminated electronically using SurveyMonkey, targeting those familiar with E-services. The questionnaires were also circulated via social media, e-mails, and WhatsApp. The response rate was 94% of all participants who matched the criteria. Some of the questionnaires were excluded from the 187 respondents who completed and answered the questionnaire.

Table 1 presents that in the gender response rate of the survey, male respondents (66.31%) were more than female respondents (33.69%). A scrutiny of the age group indicated that most respondents were less than 44 years old (75.91%). Table 1 also shows that 5.34% of the respondents were more than 55 years old. Similarly, an analysis of income groups reveals that the dominant group filling the EI online survey belongs to the income group of 2000 JDs and below. This group resembles 68.28% of the total respondents, followed by 19.35 % of respondents belonging to the 2001 JD to 4000 JD group (upper-middle class), and 12.37% of respondents were above 4000 JDs. Moreover, 59.36% of the sample live in Amman (the capital), and 40.64% live in other cities.

Table 1. Demographic profile of respondents*

Demographic characteristic	Explanation	Frequency (%)	N**
Gender	Male	66.31	124
	Female	33.69	63
Age (years)	18 to 24	43.32	81
	25 to 34	12.83	24
	35 to 44	19.76	37
	45 to 54	18.72	35
	55 to 64	4.81	9
	65 and above	0.53	1
Household Income	Less than 1000 JD	36.02	67
	1000 JD to 2000 JD	32.26	60
	2001 JD to 4000 JD	19.35	36
	> 4000 JD	12.37	23
Region	Amman	59.36	111
	Outside Amman	10.64	76

Note: * All questionnaires were included here; ** number of respondents.

4. RESULTS

This section summarizes the responses of different factors affecting the adoption of EI; sustainability, cost-effectiveness, operational benefits, and the responses to EI challenges; security-related, customer-related, and insurer-related issues. It also reports the results of investigating the impact of demographical variables on factors (challenges) affecting (facing) the adoption of EI.

4.1. Summary statistics

Table 2 shows the results of summary statistics. The findings of the study show that most respondents believe that EI promotes sustainability; more than 77% agree and strongly agree that EI promotes environmentally friendly practices. 74.56% agree there is no need to manually complete forms, and 57.17% of the respondents agree that EI is fully secured. In contrast, 28.16% of the respondents were unsure whether EI was secure. Most of the respondents, 85.63%, agreed that EI saves paperwork, and 56.32% feel safe using digital signatures, while 12.07% do not feel so; the remaining are not determined. Almost 60% know there is no risk of loss or damaged policy certificates, but 20.11% fear the loss or damage of policy contracts.

For the cost-effectiveness factor, the average of respondents, 79.06%, agree and strongly agree that EI is cost-effective; more specifically, 83.33% are convinced that EI results in reduction of internal

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administration costs while 82.76% believe that EI reduces management costs permitting real-time networking of firm departments. 83.14% are aware that EI is beneficial for enhancing the business of insurers, and 70.69% of respondents are sure that EI involves self-operation. With regard to the payment process, 75.29% and 79.77% of respondents believe that EI reduces commission of intermediaries and it is easy to pay and receive funds using websites, respectively. When transparency is involved, 75.29% of respondents know that EI does not contradict transparency; at the same time, 20.69% of the sample is neutral. 82.18% of respondents knew that EI reduces the frequency of physical presence in insurance offices.

Regarding the operational dimension of the factors affecting the decision to adopt EI, 79.24%, the average of the respondents, agree and strongly agree that it improves operation; customers can choose from a wide variety of options and improve the management information system.

In 86.71% of the sample, respondents believe that EI helps buyers compare and choose the best policy from a wide range of prices and conditions. 73.99% of respondents believe that EI consolidating all the policies in a single account is of great help to the customers. According to 82.76% of the respondents, EI also helps improve management information. Almost 78.16% of the respondents agreed that EI is better than the traditional method in terms of buying, and 74.57% agreed that DMT (the process of converting physical accounts into electronic format) of policies makes it easier to track the policy and ensures that it reaches the buyer.

The overall average (of all responses for each option) shows that 20.33% strongly agree, 55.43% agree, and 17.82% neither agree nor disagree, the reaming is 5.38% disagree, and only 0.55% strongly disagree. These results show that 76.25% agree that all the previous dimensions are the factors that shape their perception of EI; still, 17.82% of the sample are somehow undetermined. Only a small percentage disagrees with this result.

Table 3 summarizes the responses to various issues and challenges facing the adoption of EI. The paper uses 14 statements related to security, customer, and insurer-related issues. The results show that 70.53% of the respondents agreed that security and privacy are issues in EI practices. More than two-thirds of the sample, 74.57%, agreed that security is an issue with customers regarding fear of losing confidential data (username and password), and 70.53% of the respondents agreed that privacy is an issue in the case of an EI. The illegality of electronic signatures is sometimes a challenge for 75.72% of the respondents. Finally, respondents are aware that engaging in EI incorporates sharing the database by the company; 61.27% agree. Moreover, respondents believe that issues related to customers are a major issue. 65.90% and 67.63% of respondents agree that a lack of knowledge about repositories and knowledge of using the internet, thus, these are two main constraints to customers adopting EI.

Respondents, of whom 76.88% agreed, also believe that customers are not sufficiently knowledgeable about EI. Results also show that EI involves reluctance and resistance to change from the point of view of the respondents (77.01%).

Insurers are a major component of EI. The challenge of adopting EI, however, is dual for clients and insurers simultaneously, and the insurance sector in Jordan must move from traditional insuring to technology oriented. Respondents agree that EI policies do not involve a discount on the premium (as in an agent-based system) in 54.34% of the sample. However, 15.03% of the respondents believed that EI involves a discount on premium, and interestingly, 30.64% of the study sample is neutral. Respondents believe that EI policies can be customized according to the needs and requirements of the customers are 21.39% of the sample, in contrast to 49.71% did not. Although 20.58% of respondents see that there is a support from both insurers and intermediaries, 50.57% of them are not sure of the efficiency of data shifting in the case of moving from one repository to another, and 18.39% believe that it is an easy and efficient process. Respondents believe there is a lack of a proper web-based mechanism for protecting claims are 55.43% of the sample, and 62.85% see that a very restricted portfolio of products sold online by the insurers; on the other hand, 14.29% and 12% disagree, respectively.

The overall average (of all responses for each option) shows that 13.34% strongly agree, 50.55% agree, and 23.98 neither agree nor disagree, the reaming is 10.2% disagree, and only 1.93% strongly disagree.

Table 2. Summary of various factors affecting EI adoption in Jordan (20 statements) covering the dimensions of sustainability, cost-effectiveness, and operational benefit

Factor	Statements included in the factor	S. A	A	N	D	S. D
Sustainability	EI is all about promoting environmentally friendly practices	17.24%	60.34%	17.24%	4.60%	0.57%
	There is no need to manually complete forms	26.01%	48.55%	14.45%	10.98%	0.00%
	EI helps in sustainable development	28.16%	56.90%	12.07%	2.87%	0.00%
	EI is fully secured	9.77%	47.70%	28.16%	13.22%	1.15%
	EI avoids paperwork as much as possible	35.06%	50.57%	9.77%	4.60%	0.00%
	EI requires digital signatures, which are fail-safe	12.64%	43.68%	31.61%	10.92%	1.15%
	There is no risk of loss or damage to the policy certificates	13.22%	46.55%	20.11%	18.97%	1.15%
Average		20.30%	50.61%	19.06%	9.45%	0.57%
Cost-Effectiveness	EI reduces the cost of internal administration.	23.56%	59.77%	11.49%	4.60%	0.57%
	EI reduces the management costs permitting real-time networking of company departments	21.84%	60.92%	14.94%	2.30%	0.00%
	EI is beneficial for enhancing the business of insurance providers	20.93%	62.21%	14.53%	2.33%	0.00%
	EI involves Self-operation	12.07%	58.62%	25.29%	4.02%	0.00%
	EI reduces commission paid to intermediaries since it can be sold directly to clients	22.99%	52.30%	17.82%	4.02%	2.87%
	Ease of paying and receiving related funds	19.65%	60.12%	15.03%	4.05%	1.16%
	EI helps in improving transparency in operations	18.39%	56.90%	20.69%	4.02%	0.00%
	It reduces the frequency of being physically present in the insurance offices	28.16%	54.02%	16.09%	1.72%	0.00%
Average		20.95%	58.11%	16.99%	3.38%	0.58%
Operational benefit	EI helps the buyers in comparing and choosing the best policy from a wide range of prices and policy conditions	24.86%	61.85%	12.72%	0.58%	0.00%
	Consolidation of all the policies in a single account is of great help	16.76%	57.23%	21.39%	3.47%	1.16%
	EI helps in improving management information	27.59%	55.17%	13.22%	3.45%	0.57%
	EI is better compared to the traditional method in terms of buying	20.11%	58.05%	16.67%	4.60%	0.57%
	DMT of policies makes it easier to track the policy and ensure that it reaches the buyer	17.34%	57.23%	23.12%	2.31%	0.00%
Average		21.33%	57.91%	17.42%	2.88%	0.46%
Overall average		20.82%	55.43%	17.82%	5.38%	0.55%

Note: S.A: strongly agree; A: Agree; N: Neither Agree nor Disagree; S.D: Strongly Disagree.

Table 3. Summary of the responses to various issues and challenges in EI in Jordan (14 statements) covering the dimensions of security, customer, and insurer-related issues

Factor	Statements included in the factor	S. A	A	N	D	S. D
Security-related issues	Security is an issue with customers regarding fear of loss of confidential information such as username and password	15.03%	59.54%	17.34%	8.09%	0.00%
	Privacy is an issue in the case of an EI	19.08%	51.45%	21.97%	6.94%	0.58%
	The illegality of electronic signatures is a challenge sometimes	16.76%	58.96%	17.92%	5.78%	0.58%
	Sharing of the database of customers by the company	11.56%	49.71%	22.54%	10.40%	5.78%
Average		15.61%	54.92%	19.94%	7.80%	1.74%
Customer-related issues	Lack of knowledge about repositories is also a constraint	8.67%	57.23%	28.90%	4.62%	0.58%
	Lack of knowledge about using the internet also becomes a constraint	16.18%	51.45%	19.08%	10.40%	2.89%
	There is a lack of awareness regarding EI among customers	21.39%	55.49%	16.76%	6.36%	0.00%
	EI involves reluctance /resistance on the part of customers to change from traditional methods	14.37%	62.64%	17.82%	4.60%	0.57%
Average		15.15%	56.70%	20.64%	6.50%	1.01%

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Table 3 (cont.). Summary of the responses to various issues and challenges in EI in Jordan (14 statements) covering the dimensions of security, customer, and insurer-related issues

Factor	Statements included in the factor	S. A	A	N	D	S. D
Insurer-related issues	EI policies do not provide a discount on the premium (as in an agent-based system)	12.14%	42.20%	30.64%	11.56%	3.47%
	E insurance policies cannot be customized as per the needs and requirements of the customers	7.51%	42.20%	28.90%	19.08%	2.31%
	Unlike traditional methods, there is a lack of support from insurers and intermediaries	10.86%	41.14%	27.43%	18.29%	2.29%
	There is difficulty in data shifting in case of movement from one repository to another	8.62%	41.95%	31.03%	15.52%	2.87%
	There is a lack of a proper web-based mechanism for protecting claims	10.86%	44.57%	30.29%	11.43%	2.86%
	Insurers selling online directly to clients are offering a very restricted portfolio of products	13.71%	49.14%	25.14%	9.71%	2.29%
Average		10.62%	43.53%	28.91%	14.27%	2.68%
Overall Average		13.34%	50.55%	23.98%	10.20%	1.93%

Note: S.A: strongly agree; A: Agree; N: Neither Agree nor Disagree; S.D: Strongly Disagree.

4.2. Hypotheses testing results

To investigate the impact of demographic variables on both factors influencing the adoption of EI and on various issues/challenges faced using EI, the paper applies the analysis of variance (ANOVA). The empirical results of ANOVA between the demographic profile of investors and perception towards the adoption of EI reported in Tables 4-6 show that age and income have significant impact on the perception regarding the factors affecting the adoption of EI; they are significant at least at 5% level of significance.

Furthermore, the results of ANOVA between demographic variables and perceived issues and challenges faced in using EI are reported in Tables 7-9. Results show that gender and age have a statistically significant impact on customer-related issues and security-related issue, respectively. Their impact is significant at the 5% level. While income level has a significant impact on insurer-related issues.

Table 4. Analysis of Variance (ANOVA) between Gender variable and customer perceptions of EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Sustainability	Between Groups	0.036	1	0.036	0.143	0.705
	Within Groups	42.843	171	0.251		
	Total	42.879	172	–		
Cost-Effective	Between Groups	0.218	1	0.218	0.833	0.363
	Within Groups	44.770	171	0.262		
	Total	44.989	172	–		
Operational benefit	Between Groups	0.490	1	0.490	1.884	0.172
	Within Groups	44.448	171	0.260		
	Total	44.938	172	–		

Table 5. Analysis of Variance (ANOVA) between Age variable and customer perceptions of EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Sustainability	Between Groups	3.897	4	0.974	4.198	0.003
	Within Groups	38.982	168	0.232		
	Total	42.879	172			
Cost-Effective	Between Groups	5.188	4	1.297	5.475	0.000
	Within Groups	39.801	168	0.237		
	Total	44.989	172			
Operational benefit	Between Groups	5.364	4	1.341	5.693	0.000
	Within Groups	39.574	168	0.236		
	Total	44.938	172			

Table 6. Analysis of Variance (ANOVA) between Income level variable and customer perceptions of EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Sustainability	Between Groups	2.863	3	0.954	4.031	0.008
	Within Groups	40.015	169	0.237		
	Total	42.879	172			
Cost-Effective	Between Groups	2.559	3	0.853	3.397	0.019
	Within Groups	42.430	169	0.251		
	Total	44.989	172			
Operational benefit	Between Groups	5.399	3	1.800	7.693	0.000
	Within Groups	39.539	169	0.234		
	Total	44.938	172			

5. DISCUSSION

The study results show that both age and income are important in shaping the respondent perception regarding the factors affecting the adoption of EI in Jordan. Their impact is strongly positive and highly significant on people's perception toward the acceptance and adoption of EI. More specifically, the results show that the null hypothesis has been rejected for age, which means that age does affect respondents' perception of different factors affecting the adoption of EI. This is consistent with the result of Bromideh (2012) but inconsistent with the result of Pahuja and Chitkara (2016). This implies that different age groups of respondents have a perception that sustainability, cost effectiveness and operational benefits are factors that affect the process of EI adoption by insurance companies. This confirms the findings of Arora (2003), Lee and Cata (2005), and Afande (2015) and is consistent with the argument of Stanković et al. (2022) that the adoption of e-commerce, EI and integration of IT in insurance activities will provide gains in efficiency and reduce operating costs.

The results of income level also indicate that all respondents, regardless of their earning power, have a variation in their perception about the factors that are necessary to adopt EI, and thus reject the null hypothesis. This is consistent with the result of Bromideh (2012) but partially consistent with Pahuja and Chitkara (2016) who find that income level has a significant impact only on sustainability benefits.

In sum, the results indicated that people fully know the benefits of adopting EI. The sustainability, cost-effectiveness and operational benefits influence people's perceptions based on their age and income level. These factors are determinant factors in shaping people's perception toward adopting EI, as people consider and appreciate the conserving of resources, promoting a friendly environment and expect these factors to reduce activities' costs, get more competitive offers, save time and create more convenience to reach insurers.

On the other hand, Gender is not important as the others in shaping the respondents' perception of different factors affecting the adoption of EI in Jordan; the effect is insignificant and thus the null hypothesis for gender is accepted. This is consistent with the result of Pahuja and Chitkara (2016). This implies that perceptions of respondents about the factors do not vary across different gender groups. That is, the practices of activities related to the sustainability, cost effectiveness and operational benefits of EI are not considered and appreciated by both male and female.

Based on the study findings, insurers may develop customized promotional campaigns to target specific segments using and highlighting the appreciated issues aforementioned. Companies may rely on demographics such as the level of income and age as a base for the creation of their customized offers and policy/product differentiation.

With regard to the relationship between demographic variables and perceived issues and challenges faced in using EI, results show that gender has a significant impact on customer-related issues. This indicates that in the case of gender variable, the null hypothesis is partially rejected for one factor, namely the customer-related issues. This result is inconsistent with Pahuja and Chitkara (2016). This may mean a degree of discrepancy between male and female regarding their awareness and knowledge of using EI; this includes lack of knowledge of using the internet, lack of interest due to unaware-

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ness of benefits related to the adoption of electronic channels, and high resistance toward the electronic transactions that impede them from shifting from traditional to electronic channels. This could be due to differences in education level between male and female. Stanković et al. (2022) find that education is marked as medium obstacle for adoption EI in Republic of Serbia. As a policy implication, insurance firms may need to increase the interactions in different areas, including education to enhance the awareness of importance and benefits of insurance services and thus increasing the chance of adopting EI (Stanković et al., 2022). Further, insurers may convert this challenge into an opportunity if they successfully focus on a market differentiation strategy. It requires going with this important segment step-by-step to change perceptions and build strong confidence in using the insurer's electronic channels among gender groups. A clear customer value determination with a differentiable and competitive offer, with explicit and implicit promises of best service, may motivate and persuade customers to shift from traditional channels.

The results, however, show that gender has an insignificant impact on security and insurer-related issues, which is consistent with Pahuja and Chitkara (2016).

Age has a significant impact on security-related issues, but it does not have any impact on other perceived issues; customer and insurer related issues. Therefore, the null hypothesis regarding the impact of age on issues and challenges is partially rejected for one factor; security-related issues. The results indicate that age is the only determinant factor in shaping people's perception toward security related to the adoption of EI. Therefore, the fear of revealing confidential information, the consideration of privacy issues, and the possibility of sharing a company's customer database with others all together vary across different age groups. Security, therefore, is one of issues and challenges that affect the adoption of EI in Jordan. This is similar to Arora (2003) who finds security is the main obstacle of e-commerce usage, and Sapa et al. (2014) who find that security is a major concern to EI users. In contrast, Pahuja and Chitkara (2016) find that age does not affect any of issues and changelings, while Bromideh (2012) finds that age only affects the ability and motivation to use computer and internet i.e. affects customer related issues.

Finally, the effect of the income level factor on insurer-related issues is strong and highly significant, which partially rejects the null hypothesis. That is, income level is an important determinant

Table 7. Analysis of Variance (ANOVA) between Gender variable and perceived issues in using EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Security-related issues	Between Groups	0.050	1	0.050	0.170	0.681
	Within Groups	50.129	171	0.293		
	Total	50.178	172			
Customer-related issues	Between Groups	1.267	1	1.267	4.301	0.040
	Within Groups	50.386	171	0.295		
	Total	51.653	172			
Insurer-related issue	Between Groups	0.426	1	0.426	1.072	0.302
	Within Groups	67.884	171	0.397		
	Total	68.310	172			

Table 8. Analysis of Variance (ANOVA) between Age variable and perceived issues in using EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Security-related issues	Between Groups	2.990	4	0.747	2.661	0.034
	Within Groups	47.188	168	0.281		
	Total	50.178	172			
Customer-related issues	Between Groups	1.462	4	0.366	1.224	0.303
	Within Groups	50.191	168	0.299		
	Total	51.653	172			
Insurer-related issue	Between Groups	0.869	4	0.217	0.541	0.706
	Within Groups	67.441	168	0.401		
	Total	68.310	172			

Table 9. Analysis of Variance (ANOVA) between Income level variable and perceived issues in using EI

Factor	Source of variation	Sum of squares	df	Mean square	F	Sig.
Security-related issues	Between Groups	1.312	3	0.437	1.513	0.213
	Within Groups	48.866	169	0.289		
	Total	50.178	172			
Customer-related issues	Between Groups	1.758	3	0.586	1.985	0.118
	Within Groups	49.895	169	0.295		
	Total	51.653	172			
Insurer-related issue	Between Groups	5.589	3	1.863	5.020	0.002
	Within Groups	62.721	169	0.371		
	Total	68.310	172			

of insurer-related issues, and thus, the competitive offers and customization of policies according to customers' needs and the necessity of establishing an outstanding customer support system vary across different income levels. However, the results show that income level is insignificantly affect the factor of security and customers related issues, which are consistent (inconsistent) with the results of Pahuja and Chitkara (2016) in terms of income level effect on security (customer) related issues. While Arora (2003) finds that high income families are mainly the users of internet and technology, and Bromideh (2012) finds that income affects the e-readiness of customers to adopt EI.

CONCLUSION

This study sheds light on the prospect of EI in Jordan and discusses all factors and issues affecting the prosperity of this sector. The study sample included 175 respondents after filtering and was based on convenience sampling.

The summary results of responses to factors affecting EI adaption show that more than two-thirds of respondents believe that EI promotes sustainability, improves cost-effectiveness and increases operational benefits.

On the other hand, the responses show that security is a major issue in EI practices. More than two-thirds of the sample show their concerns to losing confidential information, the illegality of electronic signatures and sharing their information by the company. The study results also confirm the importance of customer-related issues as the majority of respondents believe that these issues represent a focal aspect in the application of EI. However, more attention must be given to insurance-related issues as more than half of the respondents believe, for example, that policies cannot be customized, there is a lack of support and lack of protection from web-based mechanisms.

With regard to the impact of demographical variables on factors and issues affecting the adoption of EI, the study results show that only age and income are important in shaping the attitudes and perceptions of customers toward the sustainability, cost-effectiveness, and operational benefits of EI. In line with the conclusion above, gender has a significant impact only on customer-related issues, age is only significant for security-related issues, while income level significantly affects insurer-related issues.

For insurance companies to ensure suitable and effective application of EI, they need to place a primary emphasis on the aforementioned issues and challenges and give special attention to the demographic variables and their role in successfully adopting EI.

The study results provide useful insights to insurance companies and policy makers on the main issues and challenges that should be considered to enhance and increase the possibility of adopting EI, which may optimize the insurance services and thus improve the performance of insurance companies.

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AUTHOR CONTRIBUTIONS

Conceptualization: Maen F. Nsour, Samer AL-Rjoub.
Data curation: Samer AL-Rjoub.
Formal analysis: Samer AL-Rjoub, Mohammad Tayeh, Husam Kokash.
Software: Samer AL-Rjoub, Husam Kokash.
Investigation: Maen F. Nsour, Mohammad Tayeh.
Methodology: Samer AL-Rjoub, Mohammad Tayeh, Husam Kokash.
Project administration: Samer AL-Rjoub, Mohammad Tayeh.
Supervision: Samer AL-Rjoub, Mohammad Tayeh.
Validation: Maen F. Nsour, Samer AL-Rjoub, Husam Kokash.
Writing – original draft: Maen F. Nsour, Samer AL-Rjoub.
Writing – review & editing: Mohammad Tayeh, Husam Kokash.

REFERENCES

1. Aarabi, N., & Bromideh, A. A. (2006). *The Impact of e-Commerce on the Iranian Insurance Companies* (Master's Thesis). Retrieved from https://docshare.tips/docshare_58f60761ee3435d53599227f.html
2. AbuAkel, S. A., & Ibrahim, M. (2022). The Factors Influencing E-Filing Adoption Among Jordanian Firms: The Moderating Role of Trust. *Journal of Positive School Psychology, 6*(4), 8221-8231. Retrieved from https://journalppw.com/index.php/jpsp/article/view/5279
3. Afande, F. O. (2015). Value of E-Business to Insurance Firms in Kenya. *Journal of Information Engineering and Applications, 5*(5), 23-32. Retrieved from https://www.iiste.org/Journals/index.php/JIEA/article/view/22772
4. Alshamaileh, Y., Zamzeer, M., Alsawalqah, H., & Alqudah, A. (2017). Understanding the determinants of enterprise resource planning adoption in Jordan. *8th International Conference on Information Technology (ICIT).* Amman, Jordan. https://doi.org/10.1109/ICITECH.2017.8079963
5. Anouze, A. L. M., & Alamro, A. S. (2020). Factors affecting intention to use e-banking in Jordan. *International Journal of Bank Marketing, 38*(1), 86-112. https://doi.org/10.1108/IJBM-10-2018-0271
6. Arora, A. (2003). *E-Insurance: Analysis of the Impact and Implications of Ecommerce on the Insurance Industry* (Master's Thesis). London: Cass Business School Faculty of Actuarial Science & Statistics. Retrieved from https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=89be88a4cf2237017a70844d8e836fe0bc73a631
7. Bromideh, A. A. (2012). Factors affecting customer E-readiness to embrace auto E-insurance in Iran. *Journal of Internet Banking and Commerce, 17*(1), 1-12. https://www.proquest.com/openview/a45a735b764db-098d12ba799e50e20a3/1
8. Central Bank of Jordan. (2016). *Annual report 2016. Together we plan our success*. Retrieved from https://bankofjordan.com/uploads/2021/01/aebe2ad1-9b4e-600ebb14a79d.pdf
9. Central Bank of Jordan. (2017). *Annual report 2017*. Retrieved from https://bankofjordan.com/uploads/2021/01/4e55485d-7a86-600eba54ad6b.pdf
10. Chapagai, S. (2022). *Opportunities and challenges of e-commerce to customers: Comparative analysis of Nepal and Finland* (Master's Thesis). Kokkola: Centria University of Applied Sciences. Retrieved from https://www.theseus.fi/handle/10024/744250
11. Hinton, M., & Barnes, D. (2005). Towards a framework for evaluating the business process performance of e-business investments. *International Journal of Business Performance Management, 7*(1), 87-99. https://doi.org/10.1504/IJBPM.2005.006245
12. Hossinpour, M., Hasanzade, M., & Feizi, M. (2014). The Impact of E-marketing on Life and Investment Insurance Sales with emphasis on internet. *Kuwait Chapter of Arabian Journal of Business and Management Review, 3*(8), 235-245. http://dx.doi.org/10.12816/0018323
13. Jaradat, Z., Al-Dmour, A., Alshurafat, H., Al-Hazaima, H., & Al Shbail, M. O. (2022). Factors influencing business intelligence adoption: evidence from Jordan. *Journal of Decision Systems,* 1-21. https://doi.org/10.1080/12460125.2022.2094531
14. Jordan Insurance Federation. (2018). *Statistical Bulletin 2018*. Retrieved from http://www.joif.org/sites/default/files/2022-09/Annaul%20Insurance%20Business%20Report%202018.pdf
15. Jordinvest. (2016). *The Jordanian Insurance Sector* (Sector report). October 17th 2016. Retrieved from http://jordinvest.com.jo/uploads/the-jordanian-insurance-sector.pdf
16. Keivani, F. S., Almasi, M. R., Sourkouhi, Z. K., Makouei, S., & Bayat, M. (2013). An Investigation

of the Internet Effects on Business. *IOSR Journal of Business and Management, 13*(6), 96-99.

17. Khan, S. (2022). Challenges and Opportunities of E-Commerce: A Contemporary Context of Pakistan after COVID-19. Paper presented at *30th International RAIS Conference on Social Sciences and Humanities* (7-15). Washington DC, USA. https://doi.org/10.5281/zenodo.7372455

18. KPMG. (2018). *Insurance technology: Progress on digital strategies*. Global CEO Outlook, Insurance data, KPMG International. Retrieved from https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2018/10/insurance-technology-progress-on-digital-strategies.pdf

19. Lee, S. M., & Cata, T. (2005). Critical Success Factors of Web-Based E-Service: The Case of E-Insurance. *International Journal of E-Business Research, 1*(3), 21-40. http://doi.org/10.4018/jebr.2005070102

20. Maragia, A. (2016). *E-commerce adoption by insurance companies in Kenya* (Master's Thesis). Nairobi: School of Computing and Informatics, University of Nairobi. Retrieved from http://hdl.handle.net/11295/99769

21. Pahuja, A., & Chitkara S. (2016). Perceptual exploration of factors and issues affecting adoption of E-insurance. *Case Studies in Business and Management, 3*(1), 99-112. http://dx.doi.org/10.5296/csbm.v3i1.9623

22. Phichitchaisopa, N., & Naenna, T. (2013). Factors Affecting the Adoption of Healthcare Information Technology. *EXCLI Journal, 12*(1), 413-436. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4566918/

23. Puelz, R. (2010). Technology's Effect On Property – Casualty Insurance Operations. *Risk Management And Insurance Review, 13*(1), 85-109. https://doi.org/10.1111/j.1540-6296.2009.01175.x

24. Raghunath, A., & Panga, M. D. (2013). Problem and Prospects of E-Commerce. *International Journal of Research and Development – A Management Review, 2*(1), 59-68. Retrieved from http://www.irdindia.in/journal_ijrdmr/pdf/vol2_iss1/10.pdf

25. Salehi, M., & Alipour, M. (2010). E-Banking in Emerging Economy: Empirical Evidence of Iran. *International Journal of Economics and Finance, 2*(1), 201-209. https://doi.org/10.5539/ijef.v2n1p201

26. Sapa, S. G., Phunde, S. B., & Godbole, M. R. (2014). Impacts of ICT Application on the Insurance Sector (E-Insurance). *Journal of Management and Research, 3*(1), 311-320. Retrieved from https://ibmrdjournal.in/index.php/ibmrd/article/view/46901/38544

27. Stanković, J., Stanković, J. Z., & Tomić, Z. (2022). Factors Affecting Digital Transformation of Insurance in the Republic of Serbia. *Economic Themes, 60*(1), 133-149. Retrieved from https://sciendo.com/pdf/10.2478/et-hemes-2022-0008

28. Tripathi, J. P., & Khan, F. M. (2016). Problems and Prospects of E-Commerce in India. *IOSR Journal of Business and Management, 18*(1), 54-58.

29. Turban, E., King, D., Lee, J., Warkentin, M., Chung, H. M., & Chung, M. (2002). *Electronic Commerce 2002: A Managerial Perspective.* Prentice-Hall.

30. Waseem, A., Rashid, Y., Warraich, M. A., Sadiq, I., & Shaukat, Z. (2019). Factors Affecting E-Commerce Potential of Any Country Using Multiple Regression Analysis. *Journal of Internet Banking and Commerce, 24*(2), 1-28. Retrieved from https://www.icommercecentral.com/open-access/factors-affecting-ecommerce-potential-of-any-country-using-multiple-regression-analysis.pdf

31. Yao, J. (2004). Ecommerce adoption of insurance companies in New Zealand. *Journal of Electronic Commerce Research, 5*(1), 54-61. Retrieved from http://www.jecr.org/node/239

http://dx.doi.org/10.21511/ins.14(1).2023.05