IT- BASED KNOWLEDGE MANAGEMENT PROCESSES, E-SERVICES INNOVATION AND E- LOYALTY

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ABSTRACT

Business adopts heavily investments in information technology to maintain their customer's loyalty in the electronic business environment. This study contributes to investigate the impact of IT- based knowledge processes as independent constructs (knowledge discovery, knowledge capture, knowledge sharing, and knowledge application) on electronic service innovation and electronic loyalty in the telecommunications sector in Jordan. It also examines the mediating role of electronic service innovation between independent constructs and the dependent one. Data were obtained from a purposive sample of (175) respondents using a questionnaire developed for this purpose. It was found that there is a significantly direct positive impact of knowledge management processes (IT-KD, IT-KC, IT- KS, and IT- KA) on service innovation, IT-knowledge sharing (IT-KS) has a significantly direct positive impact on electronic loyalty and positively indirect impact on e- loyalty through e- service innovation as a mediator factor, in addition, there is significantly positive impact of e-service innovation on e-loyalty. In contrast, there is not significantly positive impact of (IT-KD, IT-KC, and IT- KA) on e-loyalty through the e-service innovation as a mediator. Therefore, the researched companies should be careful about how to increase e - loyalty by providing better services comparing with competitors in the same industry.

Keywords: *IT- based Knowledge Management Processes, E- Services Innovation, E- Loyalty*

1. INTRODUCTION

In general organizations and in particular telecommunication companies invest heavily in information technologies and knowledge management systems to enhance the electronic service provided to the customers, in order to sustain electronic customer loyalty. The processes of Knowledge management (knowledge discovery, knowledge capture, and knowledge sharing and knowledge application) play a critical role for creating value from existing explicit or tacit knowledge which reflects on the success of E-service innovation that lead to electronic loyalty. Therefore, the companies in the telecommunications sector in Jordan are giving priority to provide innovative services to their own customers to maintain the electronic loyalty of customers in the turbulent competitive environment. Thus, knowledge management processes considered crucial tools that contribute with a high level of customer services and loyalty. Moreover, due to the relationship between knowledge management processes and electronic loyalty still not clear in practices in some Jordanian companies, in addition the stiff competition and political challenges that facing the telecommunication sector in Jordan. This study tries to investigate the role of knowledge management processes on the electronic loyalty of customers and the role of E-service innovation as a mediating factor, in addition, to investigating new drivers for e-loyalty. In this regard, this study aims to identify the importance of knowledge management processes for companies to be as a leader in providing innovative electronic services in order to enhance electronic loyalty. Some previous studies indicated that IT-based knowledge management processes are essential tools for achieving e- innovation and e- loyalty [1]; [2]; [3]; [4]. In this regard, the study addressed the following questions: Is there an impact of IT-based knowledge processes on e- loyalty? Is there mediation impact of e-service innovation between IT- based knowledge processes and e- loyalty? What is the level of Knowledge Management Processes in the telecommunications sector in Jordan? What is the level of electronic service innovation in the telecommunications sector in Jordan? What is the level of electronic loyalty in the telecommunications sector in Jordan?

2.0 Theoretical Background and Hypotheses Building

2.1 IT- based Knowledge Management Processes

Nowadays, knowledge is increasingly considered the most important asset of organizations [5]. Organizational knowledge is considered an intangible asset that generates sustainable competitive advantage to the business firms. Thus, knowledge is a primary asset that the business develops and optimizes it over time through continuous efforts. There are two types of knowledge either tacit or explicit [6]. According to [7], there is a difference between tacit and explicit knowledge. Tacit knowledge is knowledge in the human mind, and it is difficult to express and articulate it which includes experience intuition, hunches, insights, experience, and hunches; therefore, tacit knowledge can be transformed using any direct face-to-face communication among people or using information technology. Explicit knowledge is codified knowledge that can be shared and transmitted such as, a knowledge recorded as video, or captured in a document form in archives and databases, thus, this type of knowledge can be easily transformed among people formally [8]; [9]. [10] Defined knowledge management as an approach that supports the flow and use of either explicit or tacit knowledge in effective ways. In addition, knowledge management systems defined as information technology-based systems used for enhancing knowledge management processes within an organization [11]; [12]. Refer to [13], sustainable competitive advantage is achieved through continuous enhancements of knowledge management processes that allow the organization to differentiate itself from others [13]; [6]. Thus, the effectiveness of knowledge management processes depends on how to discover and create new knowledge and how to transmit employee's knowledge throughout the organization. [14]. Based on the previous studies knowledge management processes became the most important activities that support all organizational strategies to achieve service innovation [15] and gain the competitive advantage in the marketspace [12]; [11]. Therefore, according to [16] knowledge management and innovation have a positive relationship. [17] Describes that knowledge management processes aimed at enabling the organization to acquire the knowledge needed through several processes include, knowledge creation, organizing, storing, sharing and utilizing. According to [18] stated four kinds of Knowledge management processes include Knowledge discovery, Knowledge Capture, Knowledge Sharing, and Knowledge Application as a follow:

2.1.1 IT- Based Knowledge discovery

Knowledge discovery is enabled through the sub- process of combination which combines existing explicit knowledge to generate new knowledge and socialization which combined with interactions among people and groups to generate new tacit knowledge. [19]. There are various tools include datamining, visualization, synthesis and analysis tools. An example Datamining tools support decision makers to reveal hidden patterns and relationships between variables to generate new knowledge from hieratical and current data. Sometimes, these tools can help knowledge discovery based on artificial intelligence techniques and analyze multimedia content [20]. According to [21] knowledge creation studies by Nonaka which reflects discovering new knowledge act as a key requisite for innovation. This study tries to identify the role of IT-bases knowledge discovery on e-service innovation, e-loyalty in jordan as a follow:

H1- IT-bases knowledge discovery has a significantly positive impact on e-service innovation.

H2- IT-bases knowledge discovery has a significantly positive impact on e-loyalty.

Table.1: Knowledge Discovery Definition and Description.

Construct	Definition and Description	Author
IT- Based Knowledge Discovery. (IT-KD)	Knowledge discovery refers to the process of discovering non-trivial patterns of unknown and potentially useful embedded information from existing data electronically.	[22]; [23]
	Knowledge discovery refers using information technology in order to developing new explicit or tacit knowledge from available data and information or from previous knowledge.	
	The process of creating, transforming existing (explicit and tacit) knowledge into new one.	[7]

2.1.2 IT- Based Knowledge Capture

Knowledge capturing is supported by two sub-processes, the first one is internalization which means converted the explicit knowledge to tacit one, and the second one is externalization which

means converting the tacit knowledge to explicit one. According to [24] knowledge must be codified from internal and external sources in electronic readable format such as data repositories, data bases and expert systems, therefore business employ various tools for knowledge codification and storage. Thus, information technologies can be employed to capture relevant information and content and convert the tacit knowledge to explicit one. [18]. Knowledge management initiatives including knowledge capturing helps boost innovation and organizational performance and positively impacts on innovation [25]. Based on the prior studies, the following hypotheses suggested:

H3- IT-bases knowledge capture has a significantly positive impact on e-service innovation.

H4- IT-bases knowledge capture has a significantly positive impact on e-loyalty.

Table.2: knowledge Capture Definition and Description.

Construct	Definition and Description	Author
IT- Based Knowledge Capture. (IT-KC)	Knowledge capture is the process of knowledge retention includes gathering and organizing of knowledge using information technology.	[26]
	Knowledge capture means determining the types of knowledge, competencies and the persons who have an expertise that must be captured.	[27]
	Knowledge capture is the first high- level stage of knowledge management processes cycle.	[28]

2.1.3 IT- Based Knowledge Sharing

Knowledge sharing supported by sub-processes socialization refers to the tacit knowledge is shared among individuals or groups and exchange sub-process which enable explicit knowledge to be transferred between individuals. Information technologies can be used as a communication medium to support communications and interactions among individuals. In various ways, information technologies have made knowledge sharing around the globe a reality. [29]. [18] [30], addressed that when all participants are willing to share

knowledge and technology which will eventually lead to a better enhancement on service innovation. Thus, the following hypotheses were introduced:

H5- IT-bases knowledge sharing has a significantly positive impact on e-service innovation.

H6- IT-bases knowledge sharing has a significantly positive impact on e-loyalty.

Table.3: Knowledge Sharing Definition and Description.

Construct	Definition and Description	Author
IT- Based Knowledge Sharing. (IT- KS)	Knowledge sharing defined as the action in order to make knowledge available among participants electronically.	[31]
	Knowledge sharing considered a social system that supports collaboration environment which is enabled through information technology.	[32]
	Knowledge sharing is a process of exchanging and understanding knowledge, expertise and intelligence among business partners electronically.	[33]

2.1.4 IT- Based Knowledge Application

Knowledge application is supported by two sub-processes, routines include utilizing the embedded knowledge in procedures, rules in order to guide the future behavior and direction sub-process that means individuals possessing the knowledge direct the action of another individual without transferring it to that person. Several application tools enable routine and direction sub-processes such as decision support systems, expert systems and troubleshooting systems [19]. [34], stated that knowledge application in an effective manner can bring better new products and services which lead to service innovation within an organization. AS the previous suggestions the study proposed the following hypotheses:

H7- IT-bases knowledge application has a significantly positive impact on e-service innovation.

H8- IT-bases knowledge application has a significantly positive impact on e-loyalty.

Table.4: Knowledge Application Definition and Description.

Construct	Definition and Description	Author
IT- Based Knowledge Application. (IT- KA)	Knowledge application is the process through which knowledge is directly applied based on information technology to assist in problem solving.	[35]
	The knowledge application process means that using direction and routine sub- process using information technology to make decisions and perform tasks.	[19]
	Knowledge application refers to promote learning by introducing into practice different elements through IT-based translating and applying knowledge for continuous learning among organization members.	[36]

3.0 Electronic Services Innovation

E-Service innovation referee to the service process or service product that is depend on advanced information and telecommunication technology or systematic techniques to provide benefit to both the customers and service producers [37], and can be new solution in the customer interface, new channels of distribution, new models of business operations with business partners, new organizational architecture, managing and organizing customer services in novel ways, adopting new technology in the business processes and improving the overall performance through human resource management [38]; [39].In the previous studies [40], discussed the Service innovation as the process of generating or creating value through adding new services to product offering or sold. Refer to [37], defines service innovation as the process of creating new models of services that satisfy current and potential customer's needs in order to differentiate the organization's position in the marketspace against their competitors. Due to rapid and advanced changing in telecommunication and information technology, electronic service became a new model to improve effectiveness and efficiency in the business process and build the tight relationship with customers and partners to achieve competitive advantage and customer loyalty [41]; [42]. Several research studies have been attempted to clarify the service innovation concept. [43], has stated four dimensions of service innovation (1) Service concept, which is a new business models services in the market space or marketplace (2) Client interface, which means new methods in which clients are participating in the service creation (3) Service delivery system, which includes new approaches the actual services are provided to the customers (4) Technology, which means services can be provided efficiently. Based on the importance of e- service innovation to provide better services the study expects the following:

H9- E-service innovation has a significantly positive impact on e-loyalty.

H10 - E-service innovation has a significantly mediation impact between IT-bases knowledge discovery and e-loyalty.

H11 - E-service innovation has a significantly mediation impact between IT-bases knowledge capture and e-loyalty.

H12 - E-service innovation has a significantly mediation impact between IT-bases knowledge sharing and e-loyalty.

H13 - E-service innovation has a significantly mediation impact between IT-bases knowledge application and e-loyalty.

Table.5: E-Service Innovation Definition and Description.

Construct	Definition and Description	Author
E-Service Innovation. (ESI)	The process of creating and adding value to services electronically.	[40]
	The process of creating new business models of services that lead to customer satisfaction in order to differentiate the organization from others in the market space.	[37]
	Service innovation considered a transformation process of how the service is designed, developed, delivered and managed.	[44] [45]

4.0 Electronic Loyalty:

Organizations adopt big efforts and strategies to maintain their customer's loyalty and

to compete in the electronic business environment because they are also facing strong competitiveness from brick and mortar organizations that sell the same goods and services [46]; [47]. Therefore, [48] stated that customer loyalty is a key factor for organizations to sustain competitive advantage and building strong customer loyalty. [49], defined electronic Loyalty as a continuous relationship between customers and the business brand by delivering the best services to gain customer satisfaction. [48] Defined E-loyalty "as the customer's favorable attitude toward an electronic business resulting in repeat buying behavior." [50]; [51] described e-loyalty as a perceived tendency to navigate the website and purchasing continuously from that website in the future. In addition, e-loyalty described as a customer commitment and favorable attitude toward an electronic business resulting in repeating purchasing behavior [48]; [52]. The electronic customer loyalty is one of the key factors for the success of electronic business and has a significant impact on organization profitability due to the tight relationship between business and their customers [53]; [54]; [55]; [56], suggested the e-Loyalty framework designed in concurrence with other studies that form diminutions of electronic loyalty include, e-Service Quality, Perceived Value, Security and Trust.

Table.6: E-loyalty Definition and Description.

Construct	Definition and Description	Author
E-loyalty. (EL)	E-loyalty refers to a customer's intention and saying positive feedback to others about a certain company website.	[57]
	E-loyalty defined as customer positive attitudes toward the company website leads to repeating buying behavior.	[48] [52]
	E-loyalty stated as continuous relationships between business and their customers through delivering unique services to reach customer satisfaction.	[49]

5.0 Theoretical Framework of the Research

Figure.1 shows the suggested conceptual framework that illustrates the Relationship among variables based on the prior studies that were mentioned in the table.1, 2,3and 4. This study tries to proposed the mediation impact of e- service innovation between IT- based knowledge processes as a key driver to achieve e- loyalty. It also shows thirteen hypotheses examined in this study as they are presented in figure.1.
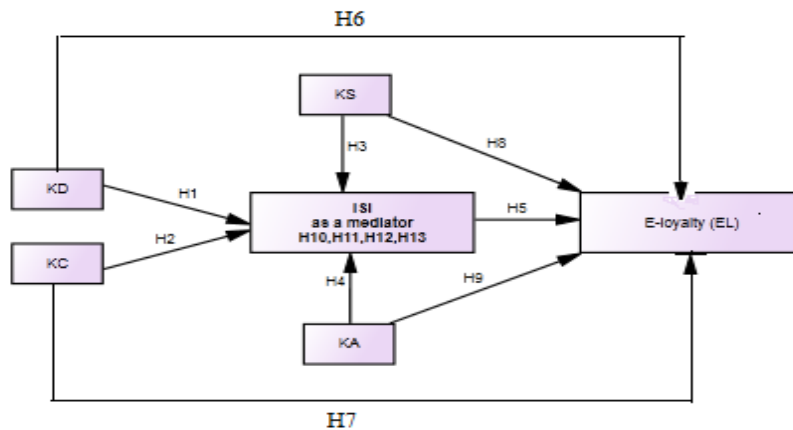
Figur.1: Theoretical Framework of the Research

6.0 Methodology

To answer the main questions and hypotheses of the quantitative analytical research, a five -point Likert scale questionnaire was developed to examine the impact of IT-based knowledge management processes on E- service

innovation and electronic loyalty and the mediating role of E- service innovation between variables in the telecommunications sector in Jordan, questionnaire variables and items were developed and adapted from the previous studies to suit with the purpose of the study as shown in the research framework section, a questionnaire of (26) items were used to examine the participants responses, in this research the independent variables(KD, KC, KS, and KA)) consisted of (12) items and will be measured from the employees perspective due to questions nature of this part, the intermediating variable(E- service innovation) consisted from (8) items   that were measured from customers perspective and the dependent variable (electronic loyalty) were measured through (6) items from customers perspective due to the nature of the questions related to the mediating and dependent variables. The population of this study consisted of all employees of the researched companies (Zain,Orang, Umniah) and the researched companies' customers. The researched companies' employees and their customers are comprised the purposive sample of (120) employees and (120) customers, a total of (82) questionnaire related to the employees' responses valid for the analysis and (93) usable questionnaire related to the customers responses, totaled (175) questionnaire valid for

analysis , Purposive sampling technique was used as specific respondents who can accurately answer the questionnaire items based on the nature of variables domain questions and some criteria related to the customers' service innovation literacy. AMOS software was used in this study to examine the study hypotheses and examining the research model fitness through determining the reliability and validity of the study Model.

7.0 Measurement Model
7.1 Model Fit Indices
 To examine the structure and composition of the factors, Confirmatory factor analysis was used to test validity of constructs. For this purpose one factor model was tested in which all items were loaded on a single factor, the single factor model fit indices:{ χ2=1234.656, normed fitness index (NFI) = 0.621, Tucker-Lewis index (TLI) =0.637, incremental fit index (IFI) = 0.682, root mean square of approximation (RMSEA)=0.122, comparative fitness index (CFI) =0.671, degrees of freedom (df) =228, p<.000, χ2 /df=5.898 goodness-of-fit (GFI) = 0.713}. According to [58] standardized factor loading of questions less than 0.40 were eliminated as shown in table (7). The item loadings from (0.582), t-value (6.544) to (0.817), t-value (15.429) were retained.

Table.7: Items' Descriptions for Constructs and Standardized Factor Loadings, (t-value).

Variable	Item No	Scale Items	Factor loadings (t-value)
IT-K D	1	The company has advanced mechanisms to support knowledge discovery through exchange ideas between employees and business partners.	0.612 (7.223)
	2	The company has rewards to encourage employees to create new ideas and knowledge.	0.747 (14.321)
	3	The company uses IT for discovering new knowledge from existing knowledge.	0.679 (13.126)
IT-K C	4	The company uses IT to sore and document collected knowledge from several sources.	0.665 (12.191)
	5	The company Has mechanisms to obtain knowledge from employees and business partners for further development.	0.699 (13.896)
	6	The company is regularly use new ways to enhance knowledge exchange among business employees.	0.817 (15.429)
IT-KS	7	The company uses knowledge Sharing technology to share new ideas.	0.623 (8.249)
	8	Sharing the best practices in company helps to increase employees learning.	0.717 (13.992)
	9	The company is regularly use new ways to enhance knowledge exchange among business employees.	0.643 (12.101)
IT-K A	10	The company has different ways to develop employee's knowledge and apply it to the new situations.	0.592 (6.894)
	11	The company uses knowledge manual and links knowledge sources in the problems solving.	0.582 (6.544)
	12	The company Has IT tools to support knowledge direction in problems solving.	0.611 (7.101)
ESI	13	My company service is a totally different service experience compared to others.	0.652 (12.178)

Variable	Item No	Scale Items	Factor loadings (t-value)
	14	My company website has a unique service quality.	0.755 (14.623)
	15	My company website has advanced ways to provide a service such as personalization and customization.	0.641 (12.081)
	16	My company website has new innovative service packages.	0.617 (7.121)
	17	My company has several service options to deliver services to customers.	–*
	18	My company website delivers high quality of services to their customers.	0.617 (7.121)
	19	My company website uses modern interaction media such as creative website, social media.	0.719 (13.998)
	20	My company website is always the first on the market with the latest technology to provide better service quality.	0.694 (13.876)
EL	21	I would not switch to the competitors' websites, even if I had a problem with service provided.	–*
	22	The company website is different from others, and I will not try an alternative.	0.711 (13.986)
	23	I consider myself a loyal customer to the company website.	0.726 (14.022)
	24	My impression about company website that I use is positive.	0.698 (13.899)
	25	I always recommend the company websites that I use to anyone seeking advice.	0.684 (–)
	26	I always do my transactions using company websites because it is the best choice for me.	0.734 (14.589)

Note: –* Eliminated questions during confirmatory factor analysis

7.2 Descriptive Statistics, Instrument Reliability

Descriptive statistics were used including mean, the standard deviation for examining the level of study constructs in the Jordanian telecommunications sector. As we have shown in table (8) the highest mean relate to knowledge sharing with a mean value 4.136, which indicates highest level of knowledge sharing in the researched companies, followed by E- loyalty with a value of 3.931, E-Service innovation 3.712, IT-Based knowledge application 3.587, IT- Based knowledge capture 3.432, IT- Based knowledge discovery 3.343 respectively. Cronbach's α value for all variables was above the (0.70) that indicate internal consistency and instrument reliability. Hence, all of these coefficient levels are accepted.

Table.8: Mean, standard deviation and Cronbach's α values.

Variables	Mean	SD	α
IT-KD	3.343	1.127	0.849
IT-KC	3.432	0.811	0.773
IT-KS	4.136	0.991	0.831
KA	3.587	0.891	0.762
ESI	3.712	0.992	0.798
EL	3.931	0.865	0.813

α=Cronbach's alpha; SD =standard deviation

As shown in the table. (9) The value of composite reliability (CR) was above 0.60 for all variables and the average variance extracted (AVE) is higher than (0.5), therefore. Convergent validity of the constructs is adequate [59]. The maximum shared variance (MSV) values less than AVE of all constructs. The evidence for discriminant validity achieved through correlation coefficients of variables less than (0.80) [59]. Bivariate correlation in the table. (9), shows that IT- KD, IT-KC, IT- KS, and IT-KA positively co-related with E- service innovation and electronic loyalty

Table.9: Validity of the Final Structural Model

Variables	AVE	CR	MSV	1	2	3	4	5	6
IT-KD	0.981	0.837	0.081	–					
IT-KC	0.845	0.789	0.195	0.278 ***	–				
IT-KS	0.913	0.772	0.192	0.341 ***	0.057 ***	–			
IT-KA	0.762	0.741	0.046	0.094**	0.163 ***	0.151 **	–		
ESI	0.977	0.798	0.196	0.298 ***	0.311 ***	0.368 ***	0.301 ***	–	
EL	0.875	0.819	0.145	0.266 ***	0.322 ***	0.341 ***	0.361 ***	0.294 ***	–

Note: MSV = maximum shared variance; CR =composite reliability; AVE =average variance extracted; **Significant at the 0.05 level (two-tailed); ***Significant at the 0.001 level,

7.3 Structural Model Results

The research hypotheses were tested using structural equation modeling with maximum likelihood estimates in AMOS. Table. (10) Shows that IT-Based knowledge sharing (IT-KS) has a significantly positive impact on service innovation (β =0.169, ρ <0.001) and electronic loyalty (β =0.171, ρ <0.05) which means there is a significantly positive impact of knowledge sharing on service innovation and electronic loyalty. In contract IT- Based knowledge discovery, IT- Based knowledge capture and IT- Based knowledge application did not have significantly positive impact on electronic loyalty (β = – 0. 063, ρ >

0.100), (β = – 0.054, ρ > 0.100) and (β = – 0.048, ρ > 0.100), but they have significantly positive impact on service innovation (β =0.182, ρ <0.001), (β =0.194, ρ <0.001) and (β =0.186, ρ <0.05). E-Service innovation has significantly positive impact on e- loyalty (β =0.196, ρ <0.001). The result revealed that the indirect impact of IT-KD, IT-KC, and IT-KA on E-loyalty through E-Service innovation was not significant (β =0. -0.027, ρ <0.05), (β = -0.016, ρ <0.001), (β = -0.012, ρ <0.001). In contract the indirect impact of IT-KS has significantly impact on electronic loyalty through E-Service innovation. Therefore, H1, H3, H5, H6, H7, H9 and H12 received empirical support. In contrast the results of H2, H4, H8, H10, H11, and H13 are not supported.

Table (10) shows direct and indirect effects among the constructs of the proposed model.

Structural Path	Direct Effect	Indirect Effect	Total Effect	Result of Hypotheses
H				
KD→ES	0.182***	-	0.182***	SUPPORTED
KC→ES	0.194***	-	0.194***	SUPPORTED
KS→ES	0.169***	-	0.169***	SUPPORTED
KA→ES	0.186**	-	0.186**	SUPPORTED
ES→EL	0.196***	-	0.196***	SUPPORTED
KD→EL	-0.063	0.036	-0.027**	NOT SUPPORTED
KC→EL	-0.054	0.038	-0.016***	NOT SUPPORTED
KS→EL	0.171**	0.033	0.204***	SUPPORTED
KA→EL	-0.048	0.036	-0.012***	NOT SUPPORTED

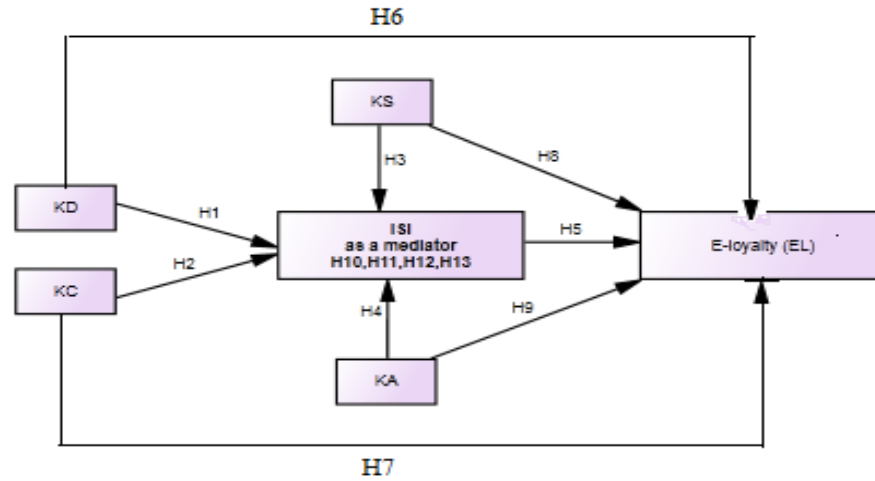Note: **Significant at the p< .05 level (two-tailed); ***Significant at the p<.001 level.

Figure .2. Results of structural model

8.0 Discussion and Empirical recommendations

The results of this study contribute to adding theoretical and empirical evidence of the importance of the IT-based knowledge management processes as shown in the study results that found (KD, KC, KS, and KA) have a significant impact for achieving service innovation in telecommunications sector in Jordan, in addition, shows that knowledge sharing (KS) positively co-related with service innovation and electronic loyalty, these findings are in accordance with prior previous studies such as [12]; [11]; [16]; [25]; [30]; [34]. Also, there is a mediation effect of E-service innovation s mediator between IT-based knowledge sharing and electronic loyalty, these findings contrasted with prior studies [41]; [42]; [49]. This study confirmed the findings of prior studies that IT-based knowledge management processes adoption by the telecommunication sector could enhance service innovation significantly and contribute to electronic loyalty. It means that electronic loyalty can be achieved directly by the effective use of knowledge sharing and indirectly through E-service innovation through providing unique services to their customers. Based on the study results, the researcher proposes the following recommendations to the researched company's management. Management should increase their investments in information technologies to cover all geographical area especially distance ones in order to deliver unique service for customers. Management should develop their staff skills to respond to customer complaints and feedback adequately. Hence, using information and telecommunication technology to enable knowledge management process gains a massive growth in service innovation and electronic loyalty. Therefore, organizations that want to sustain their customers should be taken into account knowledge management processes in order to gain customer loyalty through using advanced technologies, thus, the researcher suggests that electronic service innovation has to pay much attention to achieve electronic customer loyalty. The research results considered as a basis for further researches due to the importance of knowledge management processes and e-service innovation concept to enhance electronic loyalty in the turbulent environment.

9.0 Conclusion

Nowadays using information and telecommunication technologies considered strategic tools to create value for both the products and services provided to the customers. The mediation impact of e-service innovation between IT- based knowledge processes and e-Loyalty should be continuously analyzed to harmonize with the advancement in using information technology and changing expectations of the quality of customer service. thus, the constructs of this study are still researchable in the developing countries including Jordan. therefore, this study contributes to provide guidance to researchers and companies for how to examine the quality of electronic services as a driver to achieve electronic loyalty by using the advanced technologies in the knowledge management processes. In order to sustain electronic loyalty, companies should be maximizing their investments in information systems and technologies to bridge the connection

gap with business partners including their customers. Knowledge management processes which supported with information systems and technologies influence the quality of services and innovate new models of services to meet the customer needs. Based on the study findings, service innovation considered an important intermediate factor or as a key driver which can lead to sustaining the electronic loyalty of customers, in addition, the importance of knowledge sharing to enhance e-Service innovation and electronic loyalty. Therefore, the researched companies should be taking into account how to increase customer loyalty by providing better knowledge sharing and e-Service innovation comparing with competitors in the same industry.

Limitations and Further research

This research paper has several limitations, the research employed a quantitative method using a questionnaire without employing the qualitative approach due to the complexity of the researched sector, in addition, data were collected from single sector and country and the researched sector considered as a leader in using the advanced technology in Jordan, therefore the research findings cannot be generalized. Also, the level of cooperation of the telecommunication companies in Jordan was very limited and low. Based on further research should take into account the qualitative approach and exploring other factors may be intermediate the relationship between IT-knowledge management processes and electronic loyalty. exploring another sector is essential in order to make comparisons based on the results will be reached.

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