

The Impact of ICT Critical Success Factors in Strategic planning: an Applied Study in Jordanian Government Agencies

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Abstract: Strategic planning is a widely used tool in businesses, industries and organizations and has been recently adopted in public sectors. However, due to its special characteristics, strategic plans in government organizations are mostly developed at the institutional level. As services provided by government agencies, there must be technological solutions and science-based plans to provide the best services to customers. To solve these limitations, the study aimed to identify the impact of ICT critical success factors on Strategic planning at Jordanian Government Agencies. A quantitative questionnaire survey is conducted to examine the Impact of ICT Critical Success Factors in Strategic planning. Data is collected from (200) managers in Jordanian Income and Sales Tax Department middle and upper management. The results revealed that the degree of implementation of ICT critical success factors and the degree of implementation of Strategic planning in Jordanian Government Agencies from the point of view of upper and middle management were both in a high degree. Furthermore, there was an impact of ICT critical success factors on Strategic planning in Jordanian Government Agencies from the point of view of upper and middle management.

Keywords: ICT Critical Success Factors, Strategic planning, Jordanian Government Agencies.

1. Introduction

Since the early 1990s, (ICT) has been seen as a substance for development (Zaidan, 2017). According to Morrar, Abdeljawad, Jabr, Kisa, & Younis (2019) the information and communication technology in that time was viewed as a separate and distinct support function from the business. However, today, ICT and infrastructure applications are very basic to many jobs and lines of business and an organization cannot progress without them (Jacobsson, Linderoth & Rowlinson, 2017). Hence, senior executives should take the initiative to build effective work between the ICT organization and the rest of the organizations, particularly when managing projects (Bertschek, Polder & Schulte, 2019).

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Critical success factors are one of the most important policies that help organizations in all areas of their business improve their internal and external performance and management strategies (Albugami & Ahmed, 2015; Disterheft, Caeiro, Azeiteiro, & Leal Filho, 2015). Wakabi, W., & Grönlund (2015) Confirms that the critical success factors are to enhance the Competitiveness of the institution, compared with other organizations in the market environment. CSFs are also key; to ensure the business continuity of organizations and to ensure that they achieve success, and requires organizations to develop effective strategies; To activate the critical success factors (Tarhini, Ammar, Tarhini & Masa'deh, 2015).

Alreemy, Chang, Walters & Wills (2016) believe that critical success factors for ICTs can be summarized in senior management support, priority setting, strategic alignment, and technology employment, which greatly affect enhancing the organizational performance of the organization, in addition to developing its strategic business strategies (Shanmugam et al., 2017).

To support critical success factors for management information systems, companies must exert efforts to enhance the work of higher management and create an organizational environment based on information technology and modern technologies that are the most important factor that contribute to the progress and success in the current era (Touray, Salminen & Mursu, 2013). Besides, senior management must develop effective strategies that take consideration taking into consideration the competitive business dimensions of companies that ensure long-term support for the company's performance based on information systems (Moh'd Al-adaileh, & Al-Mobaideen, 2012). As smart organizations seek to adapt to the surrounding environment, by identifying and exploring the external environment fluctuations, designing plans, and drawing strategies that will enhance the decisions of leaders and decision-makers (Masamha & Mnkandla, 2017).

The public administration literature clarifies the nature of Strategic planning in public institutions and private companies (Bogers, Chesbrough, Heaton & Teece, 2019; Engert, Rauter & Baumgartner, 2016), but usually assumes large differences between them because the decision-making process there is more open and political due to the multiplicity of stakeholders, the complexity and ambiguity surrounding the public sector (Wheelen, Hunger, Hoffman, A. N., & Bamford, 2017). It is only recently that Strategic planning has gained attention in the literature of public administration (Karadag, 2015; Pozdnyakova et al., 2017; Rustamadji & Omar, 2019) and the field is still developing in recent years. However, some authors have argued that Strategic planning has increasing importance in shaping the performance of public organizations (Bindra, Parameswar & Dhir, 2019).

Strategic planning not only shapes tactics that are in line with expectations about the future but also pay attention the plans as an outline for daily activities (Engert, Rauter & Baumgartner, 2016). The CEO of the strategically organization should be able make up strategic vision for the organization so all members can create creative ideas (think company strategically) and exert more effort (company courage) (Pozdnyakova et al., 2017). Rabrenović, Mitrović & Kovačević (2020) add the CEO must handle the uncertainty of modern events. (Doktoralina & Apollo, 2019). Managers should adept at continuously adjusting the competitive strategy, organizational structure and business method according to the market demands. In a strategically managed organization, senior managers would like to accept change (Rustamadji & Omar, 2019; Bindra, Parameswar & Dhir, 2019).

The aim of this paper was to study the impact of ICT critical success factors on Strategic planning at Jordanian Government Agencies, particularly in the time of uncertainty and change of environment.

The research hypothesis is based on the assumption that government agencies operating in Jordan, which is highly turbulent and undergoing huge change due to a global megatrends, should improve their systems of ICT critical success factors and Strategic planning to cut down their defects and to timely implement important projects. The Governmental projects in Jordan are the focus of this research.

In this paper, we raise the following main research question:

- 1- What is the impact of ICT critical success factors in Strategic planning in Jordanian Government Agencies from the point of view of upper and middle management?

Literature review

ICT critical success factors

Information and communication technology contributes to accessing information, which is a major reason for the scientific and knowledge revolution (El Bilali & Allahyari, 2018). Whereas Information and communication technology contributes to facilitating human life by developing the inventions in various fields, for example, supplying factories with some advanced machines that helped provide good services by facilitating production processes in factories and companies and saving time in the production process and providing services (Vaskivska, Kosianchuk & Skyba, 2017).

The consumer in the current era has become more familiar with and knowledgeable about goods and services, and this leads him to demand the best services, just as consumers demand more detailed information about the services they want (Grant & Meadows, 2020). Therefore, institutions and organizations need to be able to deliver the information at the speed necessary to satisfy the needs and desires of consumers. ITC enable institutions and organizations to meet the needs of consumers easily (Evgenievna, 2019).

Information and communication technology can be defined as all technological, economic, academic and organizational activities related to technology that enables individuals and organizations to process, transmit and benefit from the information at any time and any place (Umanailo, Fachruddin, Mayasari, Kurniawan, Agustin, Ganefwati & Hallatu, 2019). Information and communication technology can also be defined as a set of data, information, advanced technological equipment and software that helps achieve the strategic goals of organizations and companies (Seymour & Geldenhuys, 2018).

The ITC in the public sector has achieved remarkable results in recent years, where modern technology has contributed to the automation of public sector administrations and has made it possible to improve the level of operational efficiency (Sefah, 2018). In addition, information and communication technology stimulated governance and helped pave the way for administrative reform. Moreover, it is known that providing high-quality e-government services increases transparency and facilitates access to government information and services, which in turn increases the citizen's confidence in the government, and enhances

the role of the public sector in the sustainable development process (Isaac, Abdullah, Ramayah & Mutahar, 2017).

The success of information and communication technology in government sectors depends on the availability of several critical factors that contribute to the success of information technology. The critical success factors for technology can be categorized as follows:

- **Top management Support:** Top management Support is one of the most important factors that help in the success of using information and communication technology in government organizations and institutions, as it helps to adopt the use of technology in conducting transactions and improves the quality of service provided to citizens and companies alike (Indraswarawati, Putra & Cahyani, 2019).
- **System quality:** The success of information and communication technology in institutions and organizations depends on adequate infrastructure that supports the use of technology such as Internet networks, databases and computers (Ameen, Alfalasi, Gazem & Isaac, 2019).
- **Service quality:** The use of modern technological devices to provide fast and distinguished services helps the successful use of information technology in companies, institutions and government agencies (Chaudhary, Chaudhary & Ali, 2020).
- **User participation:** The success of information technology also depends on the ability of users and customers to use technology as required (Chaudhary, Chaudhary & Ali, 2020).

Strategic planning

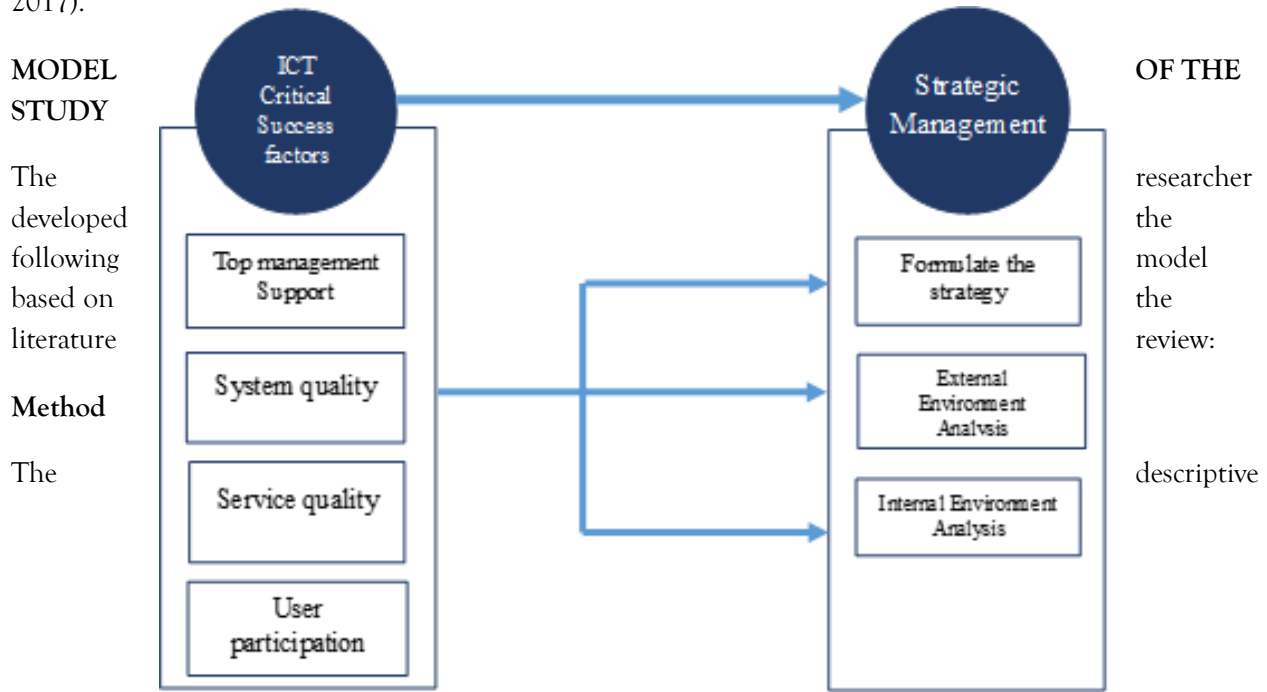
Strategic planning have become one of the topics that receive great attention in today's business, where the competition is intense, scarcity of resources, Rapid changes that require conscious management (Dzwigol, 2020). Strategic planning help the organization to have the ability to create distinct capabilities on which to base sustainable competitive advantages that lead to success and better results. Strategic planning has evolved over different periods and has become a knowledge asset that all organizations and companies benefit from in achieving their strategic goals(Schilling & Shankar,2019).

Strategic planning is among the most important factors that contribute to the success of the institution or organization. Where Strategic planning contributes in developing and improving the future visions of the organization and helping to predict changes and problems that may occur in the future (Dobrovič, Kmeco, Gallo & Gallo, 2019). The importance of Strategic planning is concentrated on uniting all efforts in all administrative departments to achieve the desired goals and utilize financial and human resources in the best possible way (Ivanova, Holionko, Tverdushka, Olejarz & Yakymchuk, 2019).

Strategic planning can be defined as an administrative process by which the resources are managed in a way that ensures the achievement of all its strategic objectives. whereas this is done according to many steps, which in turn begin to define these goals and work on analyzing the competitive environment surrounding the institution And analyzing its internal system, then developing a system for evaluating strategies, with the

necessity to identify the available opportunities and threats that the institution may face (De Moortel & Crispeels, 2018).

Strategic planning aims to assist the organization to increase its ability to detect mistakes and correct them to avoid their recurrence in the future (Dvorský, Petráková, Khan, Formánek & Mikoláš, 2020). Strategic planning also aims to increase the management's ability to make crucial decisions capable of improving the competitiveness of the organization in the labour market (Bondarenko, Isaeva, Orekhov & Soltakhanov, 2017).



The Research hypothesis

The hypotheses can be presented as follows:

Main Hypothesis (H₀₁). There is no impact of CT critical success factors and its variables (**Senior Management Support, System Quality, Service Quality, User participation**) on the Strategic planning and its variables (**Formulate the strategy, External Environment Analysis, Internal Environment Analysis**) at ($\alpha \leq 0.05$) at Jordanian government agencies.

This hypothesis is divided into three sub-hypotheses:

(H_{01.1}). There is no impact of CT critical success factors and its variables (**Senior Management Support, System Quality, Service Quality, User participation**) on **Formulate the strategy** at ($\alpha \leq 0.05$) at Jordanian government agencies.

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(H_{01.2}). There is no impact of CT critical success factors and its variables (**Senior Management Support, System Quality, Service Quality, User participation**) on the **External Environment Analysis** at ($\alpha \leq 0.05$) at Jordanian government agencies.

(H_{01.3}). There is no impact of CT critical success factors and its variables (**Senior Management Support, System Quality, Service Quality, User participation**) on the **Internal Environment Analysis** at ($\alpha \leq 0.05$) at Jordanian government agencies.

The Research Instrument

The instrument contains (30) questions measuring the impact of ICT critical success factors on Strategic planning at Jordanian government agencies.

The questionnaire contains (3) demographic variables and (30) questions represent study variables (critical success factors and Strategic planning at Jordanian government agencies) as the following:

Independent Variable (critical success factors at Jordanian government agencies: consist of (4) fields:

- Senior Management Support
- System quality
- Service Quality
- User participation

Dependent Variable (Strategic planning at Jordanian government agencies: consist of(3) fields:

- Formulate strategy
- External Environment Analysis
- Internal Environment Analysis

Data Analysis and Interpretation

To examine the hypotheses to examine the impact of ICT critical success factors on Strategic planning at Jordanian government agencies, (SPSS) in processing the following statistical techniques in data analysis:

1. Reliability Test
2. Frequencies and percentages
3. Descriptive Statistical Techniques
4. Linear Regression

Study Sample

The population of the study consisted of a (200) managers in Jordanian Income and Sales Tax Department middle and upper management, as it is classified into its demographic characteristics in the tables below:

Table (1): Demographic Characteristics of the Sample (Gender, Academic Level, Years of Experience)

variable	Category	Frequency	Percentage
Gender	Male	151	75.5
	Female	49	24.5
	Total	200	100%
Academic Level	Bachelor's Degree	67	33.5
	Master's Degree	84	42.0
	Doctorate Degree	49	24.5
	Total	200	100%
Years of Experience	Less than 1 year	16	8.0
	1-3 years	29	14.5
	3-5 years	129	64.5
	More than 5 years	26	13.0
	Total	200	100 %

Table (1) shows that the percentage of males from the Sample was (75.5%) meanwhile it was for females (24.5%). For the variable (Academic Level) that the (Bachelor's Degree) was (33.5 %), (Master's Degree) was (42.0%), and (Doctorate Degree) was (24.5%). For the variable (Years of Experience), (Less than 1 year) rank was (8.0 %), and (1 -3 years) rank was (14.5 %) and (3 -5 years) rank was (64.5 %) and finally (More than 5 years) rank was (13.0 %).

Validity and reliability of the instruments

The test would be designed to meet such requirements as the validity of the test. The experts will be chosen according to their broad experiences in the field.

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To reach a degree of reliability of the test, to reach the research goal which is to explore the direct impact of ICT critical success factors on Strategic planning at Jordanian government agencies.

Table (2): Cronbach's alpha For the study fields

Field number	Field	Value of (α)
Independent Variable: Critical success factors at Jordanian government agencies		
F1-1	Senior Management Support	0.642
F1-2	System quality	0.687
F1-3	Service Quality	0.750
F1-4	User participation	
Dependent Variable: Strategic planning at Jordanian government agencies		
F2-1	Formulate the strategy	0.624
F2-2	External Environment Analysis	0.748
F2-3	Internal Environment Analysis	0.885

The table above shows the total Cronbach's alpha for the study fields was above (0.60), which will lead to the stability of the results for this study

2. Findings and Discussions

To analyse, the data and examining Hypotheses, to explore the direct impact of ICT critical success factors on Strategic planning at Jordanian government agencies, descriptive statistics and Simple Regression, is used as shown as follow:

Main Hypothesis (H_{01}). There is no impact of CT critical success factors and its variables (Senior Management Support, System Quality, Service Quality, User participation) on Strategic planning and its variables (Formulate the strategy, External Environment Analysis, and Internal Environment Analysis) at ($\alpha \leq 0.05$) at Jordanian government agencies.

The researcher uses the multiple regression analysis to check the impact of CT critical success factors and its variables on the Strategic planning and its variables at ($\alpha \leq 0.05$) at Jordanian government agencies.

Table (3): Multiple Regression test to check the direct effect of CT critical success factors and their variables on the Strategic planning and its variables at Jordanian government agencies

Dependent Variable	R(	R ² (	F Calculate	DF	Sig*	B	T Calculate	Sig*	
Strategic planning	0.698	0.487	46.204	4	0.000	Senior Management Support	.167	1.862	.064
				195		System quality	.272	4.765	.000
				199		Service Quality	.306	3.655	.000
				199		User participation	.536	7.301	.000

* the impact is significant at level ($\alpha \leq 0.05$)

Table (3) illustrate that the impact of CT critical success factors and their variables on the Strategic planning and its variables at Jordanian government agencies from result shows that there is a significant impact for CT critical success factors and its variables on the Strategic planning and its variables at Jordanian government agencies because the significant value was (0.000) less than (0.05), the value of R is the square root of R-Squared and is the correlation between the observed and predicted values of the dependent variable was (0.698). The coefficient of determination R² (0.487), therefore, about 48.7% of the variation in Strategic planning explained by CT critical success factors. Restriction Parameter (F) was (46.204) of the Strategic planning will be caused by CT critical success factors.

In addition, the table shows the main effect caused by (System Quality Field, Service Quality and User participation fields).

(H_{01.1}). There is no impact of CT critical success factors and its variables (Senior Management Support, System Quality, Service Quality, User participation) on Formulate the strategy at ($\alpha \leq 0.05$) at Jordanian government agencies.

the researcher uses the multiple regression analysis to check the impact of CT critical success factors and its variables on Formulate the strategy and its variables at ($\alpha \leq 0.05$) at Jordanian government agencies.

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Table (4): Multiple Regression test to check the direct effect of CT critical success factors and its variables on the Formulate the strategy and its variables at Jordanian government agencies

Dependent Variable	R(	R ² (	F Calculate	DF	Sig*	B	T Calculate	Sig*	
Formulate the strategy	0.650	0.422	35.630	4	0.000	Senior Management Support	.084	.853	.395
				195		System quality	.271	4.316	.000
				199		Service Quality	.045	.484	.629
						User participation	.729	9.029	.000

* the impact is significant at level ($\alpha \leq 0.05$)

Table (4) illustrates that the impact of CT critical success factors and its variables on Formulate the strategy and its variables at Jordanian government agencies from the result show that there is a significant impact for CT critical success factors and its variables on Formulate the strategy and its variables at Jordanian government agencies, the significant value was (0.000) less than (0.05), the value of R is the square root of R-Squared and is the correlation between the observed and predicted values of the dependent variable was (0.650). The coefficient of determination R^2 (0.422), therefore, about 42.2% of the variation in Formulate the strategy explained by CT critical success factors. Restriction Parameter (F) was (35.630) of the Formulate the strategy will be caused from CT critical success factors.

In addition, the table shows the main effect caused by (System Quality Field and User participation fields).

(H_{01.2}). There is no impact of CT critical success factors and its variables (Senior Management Support, System Quality, Service Quality, User participation) on External Environment Analysis at ($\alpha \leq 0.05$) at Jordanian government agencies.

the researcher uses the multiple regression analysis to check the impact of CT critical success factors and its variables on the External Environment Analysis and its variables at ($\alpha \leq 0.05$) at Jordanian government agencies.

Table (5): Multiple Regression test to check the direct effect of CT critical success factors and its variables on the External Environment Analysis and its variables at Jordanian government agencies

Dependent Variable	R	R ² (	F Calculate	DF	Sig*	B		T Calculate	Sig*
External Environment Analysis	0.589	0.347	25.857	4	0.000	Senior Management Support	.110	.951	.343
				195		System quality	.252	3.435	.001
				199		Service Quality	.320	2.973	.003
				199		User participation	.517	5.479	.000

* the impact is significant at level ($\alpha \leq 0.05$)

Table (5) illustrate that the impact of CT critical success factors and their variables on the External Environment Analysis and its variables at Jordanian government agencies from the result shows that there is a significant impact for CT critical success factors and its variables on the External Environment Analysis and its variables at Jordanian government agencies because the significant value was (0.000) less than (0.05), the value of R is the square root of R-Squared and is the correlation between the observed and predicted values of the dependent variable was (0.589). The coefficient of determination R² (0.347), therefore, about 34.7% of the variation in External Environment Analysis explained by CT critical success factors. Restriction Parameter (F) was (25.857) of the External Environment Analysis will be caused by CT critical success factors.

In addition, the table shows the main effect caused by (System Quality Field and User participation fields).

(H_{01.3}). There is no impact of CT critical success factors and its variables (Senior Management Support, System Quality, Service Quality, User participation) on Internal Environment Analysis at ($\alpha \leq 0.05$) at Jordanian government agencies.

The researcher uses the multiple regression analysis to check the impact of CT critical success factors and its variables on the Internal Environment Analysis and its variables at ($\alpha \leq 0.05$) at Jordanian government agencies.

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Table (6): Multiple Regression test to check the direct effect of CT critical success factors and its variables on the Internal Environment Analysis and its variables at Jordanian government agencies

Dependent Variable	R(	R ² (	F Calculate	DF	Sig*	B	T Calculate	Sig*	
Internal Environment Analysis	0.671	0.451	39.974	4	0.000	Senior Management Support	.307	2.740	.007
				195		System quality	.293	4.105	.000
				199		Service Quality	.552	5.285	.000
						User participation	.362	3.943	.000

* the impact is significant at level ($\alpha \leq 0.05$)

Table (6) illustrate that the impact of CT critical success factors and their variables on the Internal Environment Analysis and its variables at Jordanian government agencies from the result shows that there is a significant impact for CT critical success factors and its variables on the Internal Environment Analysis and its variables at Jordanian government agencies because the significant value was (0.000) less than (0.05), the value of R is the square root of R-Squared and is the correlation between the observed and predicted values of the dependent variable was (0.671). The coefficient of determination R² (0.451), therefore, about 45.1% of the variation in Internal Environment Analysis explained by CT critical success factors. Restriction Parameter (F) was (39.974) of the Internal Environment Analysis will be caused by CT critical success factors.

Discussion

The objective of the study has been to provide an understanding of the impact of ICT critical success factors on Strategic planning at Jordanian Government Agencies. Top management Support, System quality, Service quality, User participation had significant correlations with all of the three Strategic planning: Formulate the strategy, External Environment Analysis, Internal Environment Analysis. Service Quality was the most significant critical success factor when implemented on the Jordanian Income and the Sales Tax Department.

The results showed that the degree of implementation of critical factors of success for information and communication technology in Jordanian government agencies from the senior point of view and middle management was to a high degree. This may be attributed to the fact that the upper and middle departments in income and sales tax seek to build plans and strategies that would achieve their general goals

and objectives, and reach the desired results. In addition to that, employing critical success factors for ITC contributes to ensuring the fair distribution of limited resources, and reflects the clarity of strategy, vision and goals for all workers in the organization, through the development and design of simplified regulations. On the other hand, critical success factors for ITC may contribute to focusing on employees, engaging and participating in decision-making, qualifying and training them, to ensure performance excellence, continuous improvement, competitiveness, creativity, innovation, continuous evaluation, attention to customers, and meeting their needs.

The results also showed that the degree of implementation of Strategic planning in Jordanian government agencies from the point of view of senior and middle management was high. This may be due to the fact that the upper and middle departments in income and sales tax seek to implement Strategic planning because of its importance in reducing the cost resulting from making the right decisions. Strategic planning also contributes to enabling upper and middle management to deal with intertwined matters in public administration such as conflict of values, ambiguity and environmental uncertainty.

The study also revealed that there is an impact of ICT critical success factors on Strategic planning in Jordanian Government Agencies from the point of view of upper and middle management. This may indicate that the critical success factors in facilitating organizational performance processes and achieving the objectives of the tax institution because it focuses on reaching the highest levels of competitive performance. ICT Critical success factors also contribute to revealing the strengths and weaknesses of the organization, supporting its strategies at the top level, and defining the priorities that the organization must adhere to. In addition to ICT critical success factors, the tax institution is pushed to adopt the latest technological means, which helps in developing and developing internal organizational performance, which in turn is reflected in external performance, competitiveness, spread and attracting customers. These results are consistent with the majority of previous studies and together provide strong support for the view that CSFs significantly influence Strategic planning. For example, Chen (2012) concluded that the employment of CSFs is positively and statistically closely related to the discovery and analysis of the internal and external environmental factors of a company. Wohlfeil & Terzidis (2014) found that the use of CSFs is positively and statistically significantly associated with improved organizational performance and plans for the company.

3. Conclusion

The main contribution of this study is to develop a conceptual framework on critical success factors in an income tax institution and their impact on Strategic planning performance in the short and long term. The second contribution is that the results of this study support the previous studies (Wohlfeil & Terzidis, 2014; Naidoo & Fields, 2019; Maghsoodi & Khalilzadeh 2018). Focusing on quality and the user only may not be a top priority in enabling management to set a future vision and plan its strategy to overcome the difficulties in the competitive market environment, but must harmonize between the support of top management, the quality of the system used by the tax institution, as well as the quality of services and the participation used in making decisions by listening to their feedback to achieve the goals of the institution.

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Critical success factors in ICT have been portrayed in literature as an important enabler for the success of Strategic planning in industrial companies, and the results of the study support that critical success factors in information technology were an effective tool for the success of Strategic planning also in financial institutions such as income and sales tax. The study uniquely identifies service quality and top management support as other factors critical to success in a tax institution, although this is reflected in the literature reviewed as less relevant in other studies. It justifies the application of the four success factors as the constant basics for successful start-up of Strategic planning in financial institutions.

Ultimately, each one of the four CSFs cannot be viewed in isolation, as they all have significance in different dimensions of capacity within an organization. The use of these CSFs, context, content, the application, and outcome should be considered. The four critical success factors that have been identified will form the basis for developing "Strategic planning models for dealing with increasing uncertainty", sensing environmental uncertainty in the market, evolving and taking a combination of proactive and proactive strategic approaches to respond to an ever-changing market that will be proposed as a preliminary evaluation tool in organizations. Financial is to reveal the strengths and weaknesses of the organization, and outside it to achieve its strategic objectives and the competitive advantage in the market.

It might be thought that rigid frameworks for CSFs can contribute to strategy formulation (rooted in a general competitive advantage) lending itself to dynamic frameworks for strategy formulation and implementation that can take the modern organization to a new level. The landscape is changing rapidly and in an almost unpredictable way, as only strategically resilient organizations can hope to direct and achieve their goals comprehensively and engagingly. It will be interesting to watch developments on this front and to think of new critical success factors that are likely to develop in times to come.

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