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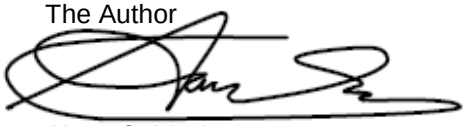

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Assessing Information System Integration Using Combination of the Readiness and Success Models

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Abstract

Information system integration (ISI) is one of the development concerns for organizations to enhance business competitiveness. However, the implementations still present its failures. Despite the ISI may successful technically; but it still seems to be unsuccessful because of the human and management issues. The issues may relate to the readiness constructs of ISI. This study was aimed to know the status of the readiness and success of ISI and to assess the influential factors of the integration in the sampled institution. About 160 samples were purposely involved by considering their key informant characteristics. The data were analyzed using the partial least squares-structural equation modeling (PLS-SEM) method. The findings revealed only the user satisfaction variable that mediated the positive effects of the readiness variables towards variable of the system integration success. Besides, the findings may practically helpful for stakeholders in the sampled institution, but it may also theoretically useful for researchers in regard to the readiness and success issues of ISI.

Keywords: *Information system integration, technology readiness, IS success, a combination model*

1. Introduction

Integrating IS enables the system owners to obtain their business competitiveness. ISI has been one of the major concerns for many organizations which want to implement, acquisition, or merge the IS within their business since years ago [1, 2]. Several scholars [3, 4] described that it is related to how integrated the technology and business aspects in order to enhance efficiency and effectiveness of the business functions. Unfortunately, Henningsson, Yetton [1] indicated that the integration is not implemented successfully by most of the organizations. It can be seen that the ISI issues are still tending to be a constraint for organizations to get the expected benefits of the integrated system.

In addition, ISI has also been irrefutable be one of the IS practitioner and researcher focuses since the early era of the computer-based IS development. It is referred to how to integrate the complex components of IS [5-7]. Liu, Li, Liu, and Han [8] revealed the integration term as the merge efforts of the IS components to achieve interoperability of the system for sharing information, services, and functions of the components together among the system components. It is about the physic, application, and the business aspects of the sharing [9]. However, despite the fact that the ISI implementation was successful technically; but the integration may still tend to be classified as an unsuccessful because of the user rejections. As it is described by the previous studies [10-16]; besides the technical and operational issues, the managerial and social ones are also the influential variables in the IS performance studies. One construct of the two last issues may relate to the readiness constructs of the organization owners [17].

Retrospectively, the IS performance studies have been interesting for scholars and practitioners in the IS discipline since the early era of the computer-based IS. The themes are around the efficiency and effectiveness, usability, satisfaction, acceptance, readiness, or the success [10, 13, 17-22] constructs. Several researchers tried to combine a theme with another one in terms of the interrelationship among the themes. For instance, the unified theory of acceptance and use of technology (UTAUT) [23] and the technology readiness and acceptance (TRA) [24] studies. As it is indicated by many previous studies [25, 26] which demonstrate that most of IS research models are developed based on the previous ones. Accordingly, it is an

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interesting phenomenon how to adopt, combine, and adapt the previous IS research models, in order to explore the new perspectives in the IS performance studies.

The purposes of this study were to know the status of the readiness and success of ISI in a sampled higher education institution in Indonesia and to assess factors of the readiness and success that influence the integration. The objectives were to present the status based on the perspectives of the internal stakeholders and to examine the factors included in the used model. The expectations were presentations of the readiness and success status and its influenced factors can be practically helpful to proactively plan for mitigating risks and successful integration on time and not causing cost and schedule overrun. The findings may not only be practically useful to the IS stakeholders in the sampled institution referring to a lack of awareness of challenging issues surrounding the integration process, but it may also theoretically for researchers in regard to the relations between the readiness and success issues for integrating IS. In respect of the purpose and objective points, the two research questions were then purposed for guiding the research implementation.

Q1: How to know the status of the readiness and success of IS integration?
Q2: What are the readiness and success factors that affect the integration?

This article is structured in four sections. First, the introduction part presents the research programs from the background into significances of the study. It is then followed by the second section which describes the methodological descriptions of the study. The third section demonstrates the results and its discussions. The paper is then closed by the conclusion part in the last section.

2. Research Method

This study was carried out in eight stages (Figure 1). The preliminary study was conducted by interviewing three senior staffs of the IT Department in the sampled institution and conducting a literature study. The aims were to develop programs of the study and to design the research implementation. Practically, this study was initiated for responding the readiness and success phenomenon of ISI in the sampled institution. In respect of the phenomenon, the researchers adopted and combined the technology readiness model of the Parasuraman and Colby's [17] study and the IS success model of the DeLone and McLean's [27] study, and then adapted the combination model in the context of the readiness and success assessment of ISI (Figure 2).

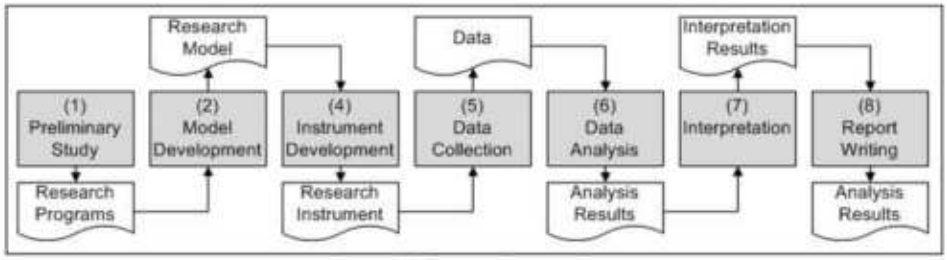

Figure 1 Research procedure

The adoption, combination, and adaptation of both models were conducted based on the input-process-output (IPO) logic of the information processing theory [26, 27] and the processional and causal logics of a model development concept [25, 28]. The authors hypothesized that variables of the technology readiness model [17] (i.e., Optimism [OPT], Innovativeness [INV], Discomfort [DCF], and Insecurity [ISC]) influence of the IS success model DeLone and McLean [25] (i.e., Information Quality [INQ], System Quality [SYQ], Service Quality [SVQ], and User Satisfaction [USF]). The authors have not adopted the system use variable here based on descriptions of the previous studies [12, 29]. System Integration Success (SIS) was recognized as the dependent variable of the developed model.

The Population consisted of around 1669 staffs and academicians of the sampled institution based on the Human Resources Department Database in the year 2017. About 160

(±10%) samples were then selected using the purposive sampling. The knowledge, experience, or expertise of the respondents were the key informant points of the selection [28, 29]. The survey instrument was a questionnaire with 57 item questions, including the respondent profiles (six items), the readiness and success profiles of the IS integration (eight items), and the five Linkert assessment (43 items) questions.

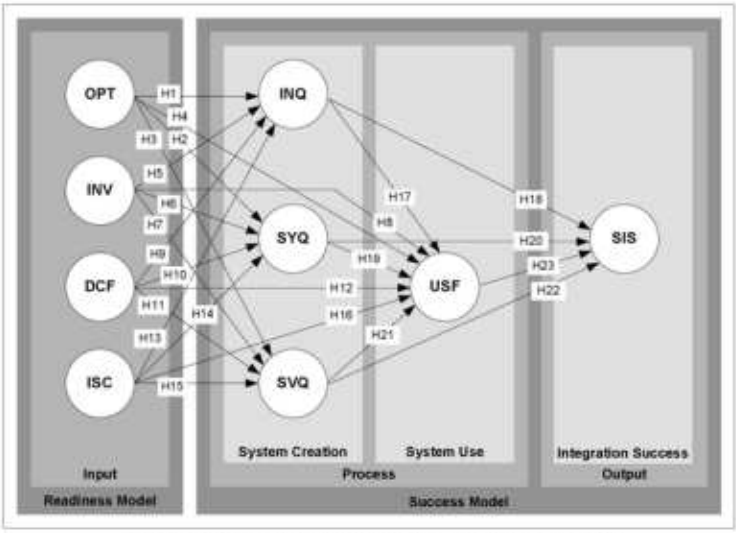

Figure 2 Research model and its hypotheses [30]

Around 87 (±54% response rate) valid responses were then used in the data analysis stage. This stage consisted of two sub-stages, i.e., the descriptive and inferential analyses. In the first sub-stage, the IBM SPSS 20 was used to analyze the demographic data for estimating the data dissemination rather than examining the data [31]. Sequentially, the PLS-SEM method with the SmartPLS 2.0 was then employed to examine the outer and inner parts of the model in the second sub-stage. This statistic software was used in regard to the small number of the collected data and the power analysis of the software [32-37]. In the outer model examination, the measurement model assessments were performed to assess the psychometric properties of the outer model part using the indicator reliability, internal consistency reliability, convergent validity, and the discriminant validity assessments. Following to the inner model examination results, the structural model assessments were then conducted to examine the inner model part using the path coefficient (β), coefficient of determination (R^2), *t*-test, effect size (f^2), predictive relevance (Q^2), and the relative impact (q^2) assessments.

Further, the interpretation stage was then done following each part of the analysis results. First, besides the descriptive analysis results were interpreted to represent dissemination of the used data, the results were also used to demonstrate the readiness and success statuses of the IS integration, in respect of the first question, objective, and purpose of the study. Second, results of the inferential analysis were then interpreted by discussing the descriptive analysis results and findings of the prior studies, referring to the second question, objective, and purpose of the study. The main concern of this interpretation sub-stage was the hypothetical assessment results. Moreover, besides the findings and contributions of the study, the study limitations were then also discussed to propose recommendations of the study.

3. Results and Analysis

3.1. The Respondent Profiles

Table 1 presents the dissemination of the used data in this study. The table shows that majority respondents (78 persons, ±89%) have been working within IT/IS job area. In the experience duration, most respondents (83 persons, ±95%) have been experiencing for over two years. Even 40 persons (±46%) and 21 persons (±24%) of them have been working

throughout 5-10 years and more than 10 years in the sampled institution. In the education level, all respondents graduated at the university level. Even 49 persons (±56%) and 12 persons (±14%) among respondents were master and doctoral degrees. Furthermore, besides they were skilled for using IT (75 persons, ±86%); most of the respondents (67 persons, ±77%) were knowledgeable about IS integration.

Table 1. Respondent profiles

Profiles	Items	f	%
Answer type	Paper-based	43	49
	On-line	44	51
Job	IT Staff	29	33
	IT Lab. Assistant	3	3
	IT Lecturer	49	56
	Librarian	6	7
Education level	Diploma	3	3
	Bachelor	23	26
	Master	49	56
	Doctor	12	14
Experience	< 2 years	4	5
	2-5 years	22	25
	5-10 years	40	46
	> 10 years	21	24
IT skills	Unskilled	1	1
	Less skilled	11	13
	Skilled	52	60
	Skillful	23	26
IT knowledge	Less knowing	20	23
	Knowing	58	67
	Extremely knowing	9	10

Table 2. The readiness and success profiles

Profiles	Items	f	%
ISSP	Available	57	66
	Unavailable	5	6
	Uninformed	25	29
Integration readiness	Not ready	6	7
	Less ready	46	53
	Ready	30	34
	Very Ready	5	6
Integration success	< 20%	3	3
	21-40%	24	28
	41-60%	30	34
	61-80%	28	32
	81-100%	2	2
Resources availability factors	Budget availability	27	31
	Personnel availability	36	41
	Technology availability	15	17
	Data availability	6	7
	Method availability	3	3
Managerial factors	Integration planning	37	43
	Integration resource organization	24	28
	Integration actuating	10	11
	Integration control	9	10
	Integration evaluation	7	8
Institutional factors	Current condition	2	2
	Culture & regulation	21	24
	Support & coordination among units	24	28
	Staff support & their commitment	7	8
	Manager support & their commitment	33	38
Integration significances	Technical task handlings	13	15
	Business operations & services	23	26
	Business managements	2	2
	Strategic plan attainments	49	56
Readiness influences to integration success	Unaffected	1	1
	Less affected	6	7
	Affected	38	44
	Extremely affected	42	48

In brief, two interrelated points of the respondent profiles are in regard to the trust and validity issues of the data sources. The first point is related to the respondent characteristics. Frenk, Anderson [38], Homburg, Klarmann [28], Subiyakto, Ahlan [14], Yazdani, Hilbrecht [29], and Subiyakto, Rosalina [39] indicated that it is about the key informants who are the credible persons as the sources of a research data. In this study, the respondent characteristics represent their key informant criteria. Thus, the characteristic credibility can be trusted as sources of the research data. In the second point, despite the fact that Christopher, Schertzer [31] indicated that the demographic information of a study may useful for estimating the data dissemination rather than for proposing the research findings; but the quality of the findings can be referred to the validity tendency of the used data, in terms of input-process-output logic of the research implementation. Here, the good demographic dissemination of the respondents may represent validity of the given data. Therefore, the use of the valid data in this study presents validity of the research findings at the end. In short, it can be seen clearly that the demographic dissemination of this study the trust and validity points of the used data.

4.2. The Readiness and Success Profiles of ISI

Table 2 shows the eight readiness and success items of the ISI profile. The descriptions below elucidate eight profiles of status and the interrelated map of the points (Fig. 3). The points are related to the first question, how to know the readiness and success status of the ISI.

- First; despite the fact that the IS integration has been planned since the early stage of the system development, but the implementation relatively tends unsuccessful as planned. Most of the respondents (57 persons, ±66%) revealed that the institution has the IS strategic planning (ISSP) and the integration success average is still below 60%.
- Second; most of the sampled people (46 persons, ±53%) mentioned that their institution is less ready in the IS integration. Even six people revealed the institution is not ready. In this research context, the readiness may contribute significantly to the ISI performance.
- Third; most of the respondents (57 persons, ±66%) presented that the integration success is still below 60% and only two persons who revealed it is above 80%.
- Fourth; the human resources and cost availabilities were the most influential issues that have been influenced the readiness and success of the ISI, in terms of its resource availability factors. Referring to Table 2, both above-mentioned issues were revealed by 36 persons (±41%) and 27 persons (±31%) respectively.
- Fifth; the planning and organizing issues of the IS integration were the most influential issues that have been influenced the readiness and success of the ISI, in terms of its managerial factors. Each of both issues was indicated by 37 respondents (±43%) and 24 persons (±28%).
- Sixth; the support and commitment of managers and the support and coordination among units were the most influential issues that have been influenced the readiness and success of the ISI, in terms of its institutional factors. The issues were presented sequentially by 33 people (±38%) and 24 persons (±28%).
- Seventh; majority respondents (71 persons, ±82%) revealed that the ISI is significant to support the strategic plan attainments (49 persons, ±56%) and the business operations and services (23 persons, ±26%) of the institution.
- Eighth; majority respondents (80 people, ±92%) indicated that the readiness aspects influence the ISI success, even 42 persons (±48.3%) of these people revealed the significant influence.

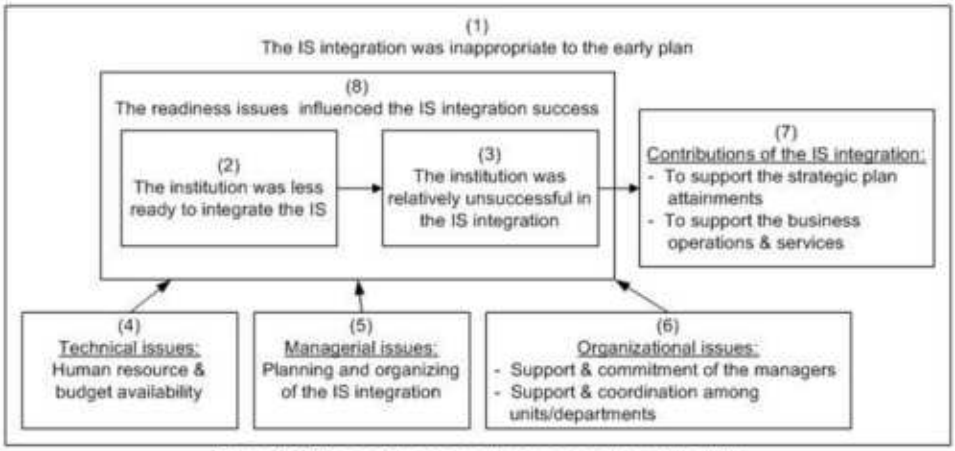

Figure.3. The readiness and success status of the ISI

It can be clearly seen that despite the fact that the ISI may have been planned by the stakeholders in order to support the operations, services, and the strategic goal attainments of the institution; but its performance seems unsuccessful as planned. The readiness issues are predicted influencing the performance. Besides, the technical (resource availability) and managerial factors, the institutional ones may have also been the factors that affect the above-mentioned influences. Although the sample, data, tools, and the analysis technique may be the limitations of the analysis stage, the explanations of the readiness and success status may help practically the stakeholders in the sampled institutions for understanding the ISI phenomenon. It is consistent with the first point of the purpose, objective, and the question of the study.

4.3. The Measurement Model Assessment Results

As it is described by the previous studies [32-37], the outer model analysis was performed by using four assessments, i.e., the indicator reliability, internal consistency reliability, convergent validity, and the discriminant validity assessments. In detail, Figure 4, Table 3, and Table 4 elucidate results of this analysis part.

- First, the indicator reliability assessment results presented that overall indicators of the model fulfilled the two requirements of the assessment. Besides, their loading values fulfilled the required threshold value (≥ 0.7); each of the values also fulfilled the cross loading mechanism (Figure 4 and Table 3). It means, each indicator correlated to their construct within the highest value among constructs of the model.
- Second, each composite reliability (CR) value of the variables reached the threshold standard value (≥ 0.7) (Table 3). This result describes that each variable interrelated consistently with their indicators.
- Third, Tabel 3 shows that the average variance extracted (AVE) values of the nine variables fulfilled the standard threshold value (≥ 0.5). The values demonstrate that the centralization variance of each indicator towards their variables fulfilled statistically the standard requirement.
- Fourth, Table 3 presents that each square root value of the AVE values was higher than their cross-loading values. The presentation means that the discriminant values of each variable are valid statistically.

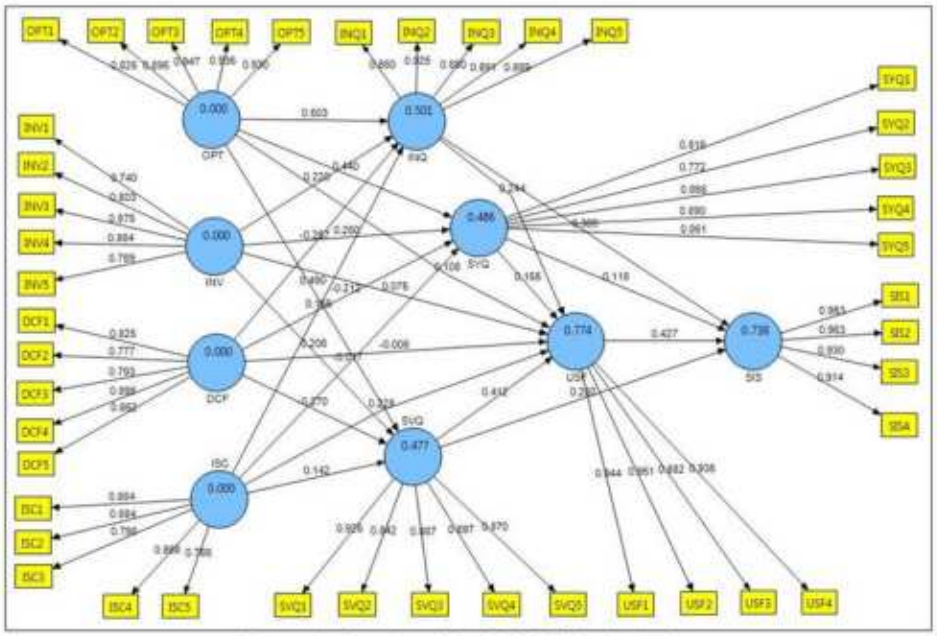

Figure.4. Results of the PLS-SEM calculation

In short, it can be seen that the relations between the nine variables and each of their indicators can be justified statistically having the good psychometric properties without rejection of the indicators. Referring to the previous PLS-SEM studies [32-37], the results of this analysis part could be continued to the inner model assessments. In addition, the reliability and validity of the used indicators may be one of the consideration points for the similar studies in the future. Despite the fact that the efforts have been conducted to guard against the model limitations, the limitation indications may also have inherent within the development; e.g., the samples, data, method, technique, or procedure of the study implementation. On the other hand, the researcher's capability or the model development assumptions of the model development may also influence in this study. Thus, it was out of control for the possibility of such happening here.

Table 3. Values of Cross Loading, AVE and CR

Indicators	Cross Loading									AVE	CR
	DCF	INQ	INV	ISC	OPT	SIS	SVQ	SYQ	USF		
DCF1	0.83	-0.22	-0.15	0.48	-0.15	-0.08	-0.16	-0.24	-0.11	0.69	0.92
DCF2	0.78	-0.15	-0.22	0.49	-0.13	-0.05	-0.17	-0.13	-0.06		
DCF3	0.79	-0.14	-0.19	0.55	-0.11	-0.10	-0.21	-0.20	-0.05		
DCF4	0.90	-0.38	-0.13	0.56	-0.23	-0.25	-0.39	-0.44	-0.23		
DCF5	0.86	-0.18	-0.05	0.63	-0.10	-0.08	-0.20	-0.26	-0.02		
INQ1	-0.23	0.86	0.40	-0.12	0.47	0.66	0.68	0.67	0.63	0.79	0.95
INQ2	-0.23	0.93	0.50	-0.07	0.66	0.76	0.75	0.73	0.77		
INQ3	-0.37	0.88	0.50	-0.16	0.57	0.67	0.74	0.74	0.66		
INQ4	-0.28	0.89	0.47	-0.19	0.61	0.69	0.76	0.72	0.68		
INQ5	-0.20	0.89	0.47	-0.01	0.56	0.74	0.79	0.71	0.78		
INV1	-0.17	0.26	0.74	-0.08	0.37	0.10	0.21	0.28	0.27	0.67	0.91
INV2	-0.17	0.43	0.80	-0.16	0.56	0.38	0.36	0.39	0.42		
INV3	-0.12	0.49	0.88	-0.10	0.47	0.37	0.49	0.54	0.53		
INV4	-0.07	0.48	0.86	-0.05	0.46	0.37	0.50	0.52	0.46		
INV5	-0.19	0.43	0.79	-0.08	0.42	0.30	0.43	0.38	0.43		
ISC1	0.60	-0.17	-0.10	0.88	-0.18	-0.07	-0.18	-0.28	0.01	0.71	0.93
ISC2	0.55	-0.12	-0.17	0.88	-0.15	0.01	-0.13	-0.26	0.06		
ISC3	0.46	0.00	0.02	0.80	-0.10	0.07	-0.04	-0.14	0.14		
ISC4	0.51	-0.06	-0.11	0.87	-0.18	0.05	-0.11	-0.19	0.08		
ISC5	0.61	-0.09	-0.06	0.79	-0.10	-0.03	-0.09	-0.16	0.05		
OPT1	-0.15	0.51	0.37	-0.08	0.83	0.53	0.51	0.51	0.48	0.82	0.96
OPT2	-0.13	0.53	0.46	-0.12	0.90	0.55	0.56	0.56	0.53		
OPT3	-0.19	0.63	0.56	-0.19	0.95	0.63	0.61	0.60	0.62		
OPT4	-0.22	0.60	0.56	-0.17	0.94	0.60	0.57	0.56	0.58		
OPT5	-0.18	0.65	0.58	-0.21	0.93	0.63	0.61	0.59	0.62		
SIS1	-0.17	0.78	0.41	0.01	0.63	0.95	0.73	0.65	0.81	0.88	0.97
SIS2	-0.21	0.77	0.43	-0.01	0.64	0.96	0.78	0.68	0.81		
SIS3	-0.08	0.71	0.37	0.00	0.61	0.93	0.74	0.65	0.75		
SIS4	-0.16	0.70	0.27	-0.02	0.56	0.91	0.74	0.62	0.71		
SVQ1	-0.32	0.81	0.44	-0.09	0.61	0.75	0.93	0.76	0.79	0.78	0.95
SVQ2	-0.25	0.69	0.40	-0.06	0.49	0.60	0.84	0.72	0.68		
SVQ3	-0.22	0.73	0.50	-0.17	0.51	0.65	0.87	0.75	0.71		
SVQ4	-0.36	0.73	0.44	-0.19	0.60	0.77	0.90	0.77	0.74		
SVQ5	-0.18	0.72	0.47	-0.12	0.56	0.71	0.87	0.73	0.71		
SYQ1	-0.30	0.65	0.53	-0.20	0.46	0.47	0.69	0.82	0.57	0.71	0.92
SYQ2	-0.29	0.62	0.38	-0.35	0.49	0.52	0.58	0.77	0.46		
SYQ3	-0.23	0.73	0.48	-0.13	0.60	0.63	0.74	0.86	0.70		
SYQ4	-0.35	0.71	0.45	-0.25	0.61	0.68	0.80	0.89	0.72		
SYQ5	-0.30	0.67	0.41	-0.19	0.44	0.57	0.74	0.86	0.67		
USF1	-0.18	0.78	0.49	0.01	0.62	0.77	0.76	0.71	0.94	0.86	0.96
USF2	-0.18	0.74	0.51	0.07	0.55	0.76	0.76	0.66	0.95		
USF3	-0.03	0.72	0.47	0.08	0.59	0.72	0.77	0.71	0.88		
USF4	-0.13	0.72	0.51	0.09	0.57	0.79	0.76	0.71	0.94		

Tabel 4. The Discriminant Validity Results

	DCF	INQ	INV	ISC	OPT	SIS	SVQ	SYQ	USF
DCF	0.83								
INQ	-0.29	0.89							
INV	-0.17	0.53	0.82						
ISC	0.65	-0.12	-0.11	0.84					
OPT	-0.19	0.65	0.56	-0.18	0.91				
SIS	-0.17	0.79	0.39	0.00	0.65	0.94			
SVQ	-0.31	0.84	0.51	-0.14	0.63	0.80	0.88		
SYQ	-0.35	0.80	0.53	-0.26	0.62	0.69	0.85	0.84	
USF	-0.14	0.80	0.53	0.07	0.63	0.82	0.82	0.75	0.93

4.4. The Structural Model Assessment Results

This assessment part was performed by employing the bootstrapping and blindfolding procedures. The bootstrapping procedure was used to examine the path coefficient (β), coefficient of determination (R^2), and the t-st examinations. On the further side, the blindfolding one was employed to examine the effect size (f^2), predictive relevance (Q^2) and the relative impact (q^2) examinations (Table 5).

- First, this examination was carried out to identify the significance of the path influences among the nine variables by using the minimum threshold value of 0.1. The results statistically presented that, 16 of the 23 paths are the significant (Sign) paths and the rest ones are the insignificant (Insig) pats (Table 5).

- Second, this examination was carried out to show variances of the target endogenous variable by using three threshold values, i.e., about 0.670 substantial (Sb), around 0.333 moderate (Mo), and approximately 0.190 and lower weak (We). Figure 4 and Table 5 demonstrate the five points of the results.
  - First point, the four variables of the system readiness dimension (OPT, INV, DCF, and ISC) explain moderately (±50.1%) variance of INQ.
  - Second point, the four variables of the readiness dimension explain moderately (±48.6%) variance of SYQ.
  - Third point, the four variables of the system readiness dimension explain moderately (±47.7%) variance of SVQ.
  - Fourth point, the four variables of the system readiness dimension together with three variables (INQ, SYQ, and SVQ) of the system creation dimension explain substantially (±77.4%) variance of the system use variable (USF).
  - Fifth point, the eight variables of the system readiness, system creation, and the system use dimensions explain substantially (±73.8%) variance of the SIS.

Tabel 5. The Structural Model Assessment Results

Hypotheses		β	t-test	R^2	f^2			Q^2	q^2			Analyses					
No.	Paths				R^2-in	R^2-ex	$\sum f^2$		Q^2-in	Q^2-ex	$\sum q^2$	β	t-test	R^2	f^2	Q^2	q^2
H1	OPT → INQ	0.50	4.27	0.50	0.50	0.33	0.34	0.36	0.36	0.23	0.19	Sign	A	Mo	Me	PR	Me
H2	OPT → SYQ	0.44	4.26	0.49	0.49	0.36	0.25	0.30	0.30	0.22	0.12	Sign	A	Mo	Me	PR	Sm
H3	OPT → SVQ	0.49	4.06	0.48	0.48	0.32	0.31	0.33	0.33	0.22	0.17	Sign	A	Mo	Me	PR	Me
H4	OPT → USF	0.11	1.04	0.77	0.77	0.77	0.03	0.62	0.62	0.61	0.01	Sign	R	Sb	Sm	PR	Sm
H5	INV → INQ	0.22	2.19	0.50	0.50	0.47	0.07	0.36	0.36	0.34	0.03	Sign	A	Mo	Sm	PR	Sm
H6	INV → SYQ	0.25	2.35	0.49	0.49	0.45	0.08	0.30	0.30	0.27	0.04	Sign	A	Mo	Sm	PR	Sm
H7	INV → SVQ	0.21	2.12	0.48	0.48	0.45	0.05	0.33	0.33	0.32	0.03	Sign	A	Mo	Sm	PR	Sm
H8	INV → USF	0.08	0.93	0.77	0.77	0.77	0.01	0.62	0.62	0.61	0.00	Insig	R	Sb	Sm	PR	Sm
H9	DCF → INQ	-0.27	1.76	0.50	0.50	0.46	0.08	0.36	0.36	0.33	0.05	Insig	R	Mo	Sm	PR	Sm
H10	DCF → SYQ	-0.21	1.59	0.49	0.49	0.46	0.05	0.30	0.30	0.29	0.02	Insig	R	Mo	Sm	PR	Sm
H11	DCF → SVQ	-0.27	2.01	0.48	0.48	0.44	0.08	0.33	0.33	0.30	0.05	Insig	A	Mo	Sm	PR	Sm
H12	DCF → USF	-0.01	0.06	0.77	0.77	0.77	0.00	0.62	0.62	0.62	0.00	Insig	R	Sb	Sm	PR	Sm
H13	ISC → INQ	0.17	1.18	0.50	0.50	0.49	0.03	0.36	0.36	0.35	0.02	Sign	R	Mo	Sm	PR	Sm
H14	ISC → SYQ	-0.02	0.12	0.49	0.49	0.49	0.00	0.30	0.30	0.30	0.00	Insig	R	Mo	Sm	PR	Sm
H15	ISC → SVQ	0.14	1.06	0.48	0.48	0.47	0.02	0.33	0.33	0.33	0.01	Sign	R	Mo	Sm	PR	Sm
H16	ISC → USF	0.23	2.11	0.77	0.77	0.75	0.12	0.62	0.62	0.59	0.05	Sign	A	Sb	Sm	PR	Sm
H17	INQ → USF	0.24	2.02	0.77	0.77	0.76	0.06	0.62	0.62	0.61	0.03	Sign	A	Sb	Sm	PR	Sm
H18	INQ → SIS	0.30	1.59	0.74	0.74	0.72	0.08	0.61	0.61	0.59	0.04	Sign	R	Sb	Sm	PR	Sm
H19	SYQ → USF	0.16	1.11	0.77	0.77	0.77	0.02	0.62	0.62	0.61	0.01	Sign	R	Sb	Sm	PR	Sm
H20	SYQ → SIS	-0.12	0.79	0.74	0.74	0.74	0.01	0.61	0.61	0.61	0.01	Insig	R	Sb	Sm	PR	Sm
H21	SVQ → USF	0.41	3.49	0.77	0.77	0.74	0.15	0.62	0.62	0.59	0.07	Sign	A	Sb	Me	PR	Sm
H22	SVQ → SIS	0.29	1.36	0.74	0.74	0.72	0.06	0.61	0.61	0.60	0.03	Sign	R	Sb	Sm	PR	Sm
H23	USF → SIS	0.43	1.99	0.74	0.74	0.69	0.19	0.61	0.61	0.57	0.10	Sign	A	Sb	Me	PR	Sm

- Third, based on the bootstrapping method with the two-tailed test (1.96) with the significance level of 5%. The examination results of the *t*-test indicated that 11 of 23 hypotheses are accepted (A) (Table 5 and Figure 5) and the rest ones are rejected (R).
- Fourth, the influence prediction (f^2) values of each variable toward another one were examined within three threshold values, i.e., around 0.02 small (Sm), 0.15 medium (Me), or 0.35 large (La) influences. Tabel 6 shows that five paths (OPT→INQ, OPT→SYQ, OPT→SVQ, SVQ→USF, and USF→SIS) are predictable with medium influences and the rest ones with the small influences.
- Fifth, this examination was conducted by using blindfolding method to show predictive relevance (PR) of the target endogenous variable with a threshold value of above zero. Table 5 presents all paths of the model are predictive relevance.
- Sixth, the relative impacts of each predictive relevance were examined via blindfolding method. The threshold values of 0.02, 0.15, and 0.35 were then used to classify the small (Sm), medium (Me), and the large (la) effects. Table 6 demonstrates that there are only two paths (OPT→INQ and OPT→SVQ) with the medium q^2, the rest ones with small q^2 (Table 5).

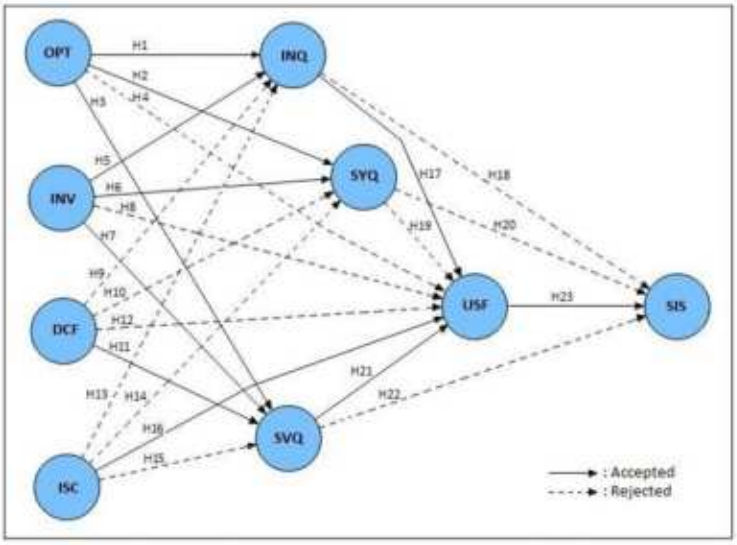

Figure 5. The Hypothetical Assessment Results

In respect of the research design of the study which has focused on the hypothetical assessment, it can be seen that 12 of 23 relations were rejected (Table 5 and Figure 5). In terms of the relation among the model dimensions (see Figure 2), the three highlighted points of the assessment results are around the relations between variables of the input (the readiness variables, i.e., OPT, INV, DCF, and ISC) with the process (the success variables, i.e., INQ, SYQ, SVQ, and USF) dimensions, relations among variables of the process dimension, and the relations between variables of the process and output (SIS) dimensions.

- First point; relations between the readiness and success variables. Despite the fact that the positive variables of the readiness dimension (OPT and INV) influenced significantly variables of the system creation dimension (INQ, SYQ, and SVQ), both variables did not have effects towards variable of the system use dimension (USF). On the other hand, each of the negative variables (DCF and ISC) has only influenced SVQ and USF.
- Second point; relations among variables of the process dimension. It can be seen that among the three variables of the system creation dimension, SYQ was the only variable which has not influence towards USF. Despite the indication is consistent with the two previous findings [12, 14], but it is inconsistent with the others [15, 16].
- Third point; relations between variables of the process and output dimensions. It is only the one variable among the four variables of the success dimension which affects the SIS variable, i.e., USF. The variable demonstrated substantially (±73.8%) variance of the SIS.

5. Conclusion

The two highlighted findings of the study are about the elucidations of the IS status and the readiness and success factors that influencing the status. First, the descriptive analysis results towards the eight readiness and success profiles of ISI present clearly that; despite the fact that the ISI was planned to support the operations, services, and the strategic goal attainments of the sampled institution; but the ISI performance seems unsuccessful as planned. The readiness issues are predicted influencing the performance (Figure 5). Besides the technical (resource availability) and managerial factors, the institutional ones may also be the influential factors of ISI. Second, despite the statistical analysis results of the study revealed that 12 of 23 relational hypotheses are rejected; but the overall results of the assessment demonstrate significantly the sequential influences between variables of the readiness dimension towards variables of the success dimensions (Figure 2). In short, it can be seen that the two above-mentioned points express a consistent tendency.

Besides, the findings may contribute practically for the ISI stakeholders of the sampled institution; it may also theoretically for researchers in regard to the new model proposition by

combining the readiness and success constructs for integrating IS. On the other hand, although the attempts were implemented to anticipate it, the utilization of the sample, data, method, technique, procedure, and tools was inherent within this study may be the study limitations. The other studies with the different limitations may also reveal the different findings with this study. It is out of control from the researchers. Therefore, the future studies can use the study findings presented herein by considering the limitations of this study.

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