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Research Article

Critical Success Factors for Implementation of Quality Improvement Initiative

Mohamad Ikbar Abdul Wahab [a,*], Faris Hakim Mazlan [a], Mohd Amran Mohd Daril [b], Khairanum Subari [a], Mazlan Awang [a], Khairul Anuar Mohd Ali [c] Nohman Khan [d]

[a] *Quality Engineering Research Cluster, Quality Engineering Section, Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology, Johor Bahru, Johor, Malaysia.*
[b] *Quality Engineering Research Cluster, Quality Engineering Section, Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology, Johor Bahru, Johor, Malaysia*
[c] *UKM Graduate School of Business, Universiti Kebangsaan Malaysia*
[d] *UniKL Business School Universiti Kuala Lumpur*

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Abstract

As time evolves, the demand of the markets becomes much more dynamic and for meeting client's expectations and have the edge over others, changes in existent processes are compulsory. Thus, Improvement Initiative (IMI) provides guidelines in achieving organizational goals which is to optimize profit and enhance the productivity. However, several cases have been reported with low rate of success of the IMI's practice in which they have failed to achieve the intended improvement result and one of the factors is lack of awareness of the IMI's Critical Success Factors (CSF). The process to identify the CSFs of an IMI is significant as it allows organizations to focus their effort to make sure they are ready and qualified when implementing the respective IMI and prevent improvement failures in the future. In addition, lack of reference regarding the reference model of comprehensive CSFs for an IMI from existing literatures allow a new study to bridge this research gap. Therefore, this paper sets out the findings of reviewing and gathering latest critical success factors and thus developing a reference model that incorporate lists of CSFs for each IMI with their attributes. This study incorporated Positivism as the research perspective and adopted quantitative research method to meet the objectives. Via extensive systematic literature review (SLR) procedures, a total of 72 publications were used to extract information needed which later enable the conceptual model development for IMI selection of comprehensive critical success factors as a reference support for decision makers. To ensure generalization of the model, the quantitative research method was adopted with a total of 137 respondents' feedback of survey were gathered from various organizations. The reflective-formative hierarchical model was then developed and analyzed using structural equation modelling (SEM) via Smart PLS software to test the model of CSFs for IMI. As the final result, six out of nine CSFs with 39 attributes were considered as critical factors when choosing the most suitable IMI to be adopted in an organization. As a conclusion, this research provides organizational readiness when starting to deploy IMI by providing comprehensive critical success factors as a reference point to aid and prepare practitioners that will lead to the failure of improvement in their business.

Keywords: Critical Success Factors; Improvement Initiative; Organizational Readiness; Quality improvement

1. Introduction

Improvement in organizational are essential as it is part of strategies to attain competitiveness and have edge over others in business world (Farrington et al., 2018; Kirkham et al., 2014). For that, Improvement initiative (IMI) plays crucial part in updating and sustaining the competitiveness of an organizations within the industry world (Abdul Wahab, 2020).

For the past three decades, number of different approaches has gained huge interests and applications in industry world such as Total Quality Management (TQM), Six Sigma, Lean and BPR (Sony et al., 2020). In fact, different IMI offers different improvement ideas and solution.

But despite of that, one thing remains, that to ensure the respective IMI implementation is successful relies on the foundation that has been perceived as a basis for determining the information needs of business managers (Daniel, 1961), which is called as the critical success factor - a term that was popularized by John F. Rockart in his publication, 1979. They are defined as factors which are critical to the success of any organization, in the sense that if objectives associated with the factors are not achieved, the organization will fail, perhaps catastrophically. It also represents the essential ingredients in which without it, a project stands little chance of success (El Safty, 2012).

2. Failure Issue

Companies keep on thinking to survive the intense competition and ultimately strike with IMI. And with such a haphazard situation of survival, they failed to focus on the criteria that leads to IMI successfulness during implementation which later results in failure. Through a review of existing literature, several researchers stated that based on reports from previous literatures, there were large proportion of organizations that implemented improvement methodology and fail to survive (Moosa and Sajid, 2010) and other reports mentioned that around 60% of Six Sigma initiatives fail to achieve the desired result. Bhasin (Bhasin, 2012) indicates that less than 10% of UK organizations are in fact successful in their Lean implementation efforts, whilst the rate of failure of TQM implementations is like other strategies (Candido and Santos, 2011), with success levels reported to be between

*Corresponding author Email address: mikbar@unikl.edu.my

10% and 30% in Europe (Oakland and Tanner, 2007). And one of the failure sources is due to the lack of awareness of CSF (Habib, 2013). Organization that fails to know or too lenient with the CSF of IMI will lead them to failure as they did not know the criteria that leads to IMI successfulness.

From the academic point of view, the variety of CSF seemed to lead to some difference in thought and belief among researchers and practitioners. As example, some researchers listed top management commitment and resources/investment/cost as an individual construct (Yadav et al., 2021; Basir and Davies, 2016); however other researchers included resource or fund as part of management commitment attributes rather than a distinguish factor (Selvaraju et al., 2019; Netland, 2016). Thus, this contradiction led to doubt among the organization and even researchers when studying this topic.

Also, despite of number of publications regarding CSF and IMI; however, as evidenced by the literature reviews, very few research findings have been reported on the compilation of CSFs for IMIs practiced in Malaysia which thus open a new avenue of opportunities to improve the existent knowledge regarding the foundation of an IMI.

Thus, as the problem statement, the research problem revolves around the increasing deployment of IMI around the world and yet the failure is still commonly reported. One of top sources of failure is lack of information regarding CSF for improvement initiative implementation which is consequential since it is evidently one of top sources of failure for the improvement activities. Most of organizations which eager to improve their business commonly 'unaware' on CSF when they have started adopting the IMI.

3. Research Methodology

This research incorporates three main phases starting with comprehensive literature searching through adoption of SLR and to provide a theoretical grounding of several information extracted focusing on list of IMIs both mentioned in literatures and organizational report, and its critical success factors. The second phases focusing on the development of the model through affinity diagram and proceed with validating the model using statistical tools.

3.1. Phase 1: Systematic Literature Review (SLR)

Instead of using traditional way which is narrative, researcher has an option using SLR, a systematic way to develop comprehensive literature review for a researcher as it can overcome the perceived weakness of a narrative review (Tranfield et al., 2003). Moreover, the SLR provides a detailed documentation of the performed step within the SLR enables an in- depth evaluation of the conducted study (Kupiainen, 2015). The information extracted through SLR used to develop the conceptual model of CSFs for IMI which explain in phase 2.

3.2. Phase 2: development of CSF model

Based on the definition and classification of IMI (Abdul Wahab, 2020), researcher chose to focus only on strategic IMI practiced in Malaysia, namely: Lean, Six Sigma, Lean Six Sigma, TRIZ, ISO 9000, BPR, Total Quality Management (TQM), ICC/QCC, and Business Excellence (BE). For that, the development of CSF model for IMI starts with clustering and grouping the critical success factors using Affinity Diagram. This tool systematically helps to segregate all listed selection view and attribute into a proper group and finally a new header of that group can be established accordingly which justify a structured manner of CSF and its attribute. Once the conceptual model is designed, it needs to be validated by experts who experienced in IMI and for that, questionnaire via survey is sent to organizations that practiced IMI for validations.

3.3. Phase 3: validation of CSF model

Once the survey data is retrieved, it needs to get processed to make it useful. For the ease of the workflow for this analysis, researcher divided the process as two stages. Stage I is by using Statistical Package for Social Sciences software (SPSS) and Stage II via Smart PLS to conduct Structural Equation Modeling (PLS-SEM).

4. Result and Discussion

4.1. CSF for strategic IMI

Based on the 72 papers reviewed via SLR, there are total of 260 attributes and 47 constructs for all nine strategic IMI mentioned in previous research. Table 1 and 2 shows the CSF and its attributes of one of the nine IMIs used in this study. This information is then used to generalize all the critical success factors under one conceptual model.

Table 1
The construct and items of CSF for Lean Six Sigma methodology

No	CONTRUCT	ITEM
1	Top management commitment	- senior management support and enthusiasm - Linking LSS to business strategy - Full support of improvement programme - Having adequate financial capability
2	Training and education	- Enhance understanding of LSS tools and techniques - Effective and holistic LSS training program across organization members
3	Organizational culture	- Bottom-up management approach -Knowledge sharing - Restructure HR management using LSS approach
4	Leadership	- LSS project prioritization - Develop clear vision and road map - Good influencer and wise decision-maker
5	Competence and expertise	- Good technical skills level of deployment facilitator - High competency of master black belt/ black belt
6	Technology utilization	- Use IT system to analyze data
7	Communication	- Effective communication at all levels vertically and horizontally
8	Staff Involvement	- Employee participation and support towards improvement activities. - Staff are part of decision making and future planning ideas.
9	Customer Focus	- Value client's need, complaint and act for future improvement
10	Performance measurement	- Monitor adherence level of CSFs - Frequent assessment of LSS progress - Project success stories, best practices sharing and benchmarking
11	Use LSS method in everyday business	- Apply standardization, Brainstorming, Mistake-proofing, Process mapping - continuous improvement
12	Motivation	- rewards and recognition
13	Linking LSS to Supplier	- Cooperate with suppliers regarding LSS goals and benefits for both sides - JIT / pull system

Table 2
CSF for Lean Six Sigma methodology mentioned across the literatures

No	CSF	Last Name of First Author							
		Yadav (2021)	Shofia (2020)	Sony (2020)	Ahmad (2020)	Selvaraju (2019)	Mishra (2018)	Papic (2017)	Abu Bakar (2015)
1	Top Commitment	/	/	/	/	/	/	/	/
2	Training & Education	/	/	/	/	/	/	/	/
3	Organizational culture	/	/	/	/	/	/	/	/
4	Leadership	/	/	/	/	/	/	/	/
5	Performance Audit	/	/	/	/	/	/	/	/
6	Communication	/	/	/	/	/	/	/	/
7	HR management	/	/	/		/	/	/	/
8	Staff involvement	/	/		/	/	/	/	/
9	vision and road map	/	/	/		/	/	/	/
10	Use of technology		/	/		/	/	/	/
11	Integrate LSS in business		/	/		/	/	/	/
12	Continuous Improvement		/	/		/	/	/	/
13	Motivation		/			/	/	/	/
14	Expertise		/	/					/
15	Project prioritization		/	/	/				/
16	Readiness					/	/	/	/
17	Linking LSS to supplier	/			/				/
18	Financial investment					/	/		/
19	Customer relationship		/	/				/	/
20	External help		/	/					/

From all the critical success factors and attributes suggested by previous researchers, some of them are mentioned similarly by different authors and the CSFs and attributes are redundant l, and some of them even stand individually in the previous literature. Because of that, the rearrangement process of the appropriate CSFs and items was quite difficult.

After extracting the required data and categorized them properly, the researcher managed to compile all the CSFs from all nine strategic IMIs and generalized them into one conceptual model with nine CSFs and 42 attributes. Table 3 below shows the comprehensive model of critical success factors for Improvement Initiative:

Table 3
Comprehensive Critical Success Factor for Improvement Initiative

CSF	ATTRIBUTE
Top Management Commitment	Work process restructure
	Business Strategy
	Resources
	HR management
Training & Education	IMI knowledge
	Share improvement goals
	Daily practice
	IT training
Leadership	Work Prioritization
	Organizational Readiness
	Strategic Planning
	Influencer
	Encourage Staff
	Management Skills
Organizational Culture	Unified commitment
	Bottom-up initiatives
	Decentralized structure
	Zero bureaucracy
	Incentive
	Public Recognition
Communication	Less formalize
	Clear explanation
	Coordinated message
	Staff Involvement
Competence & Expertise	Expert Monitoring
	Well-versed in IMI
	Improve coordination
	Benchmarking
Performance Measurement	Workplace Assessment
	Work tracking
	Improvement reports
	Learn from others
	Job satisfaction
Client & Supplier Focus	Supplier relationship
	Client Focus
	resource utilization
	Share of knowledge
Continuous Improvement	SQM
	Input and feedback
	Systematic process
	Process-based
Critical Success Factor	Importance
	Reference point
	Avoid Bias
	Structured decision

4.2. Validation of CSF model (Stage I)

In Stage I, all the respondents' data (total of 151) are uploaded into SPSS to conduct data screening, normality test, non-response bias test, common method bias test and descriptive statistics. Although the data are not required to be normally distributed before conducting in the PLS-SEM, the understanding of data distribution will ensure that the analysis outcome is more likely to be as accurate as possible (Hair et al., 2014).

Data Screening: For this purpose, two types of treatment were done namely: treatment of missing data and treatment of outliers. Upon screening the questionnaires for any missing data, there were two sets of it which were categorized as unusable and remove, due to incomplete items answered. After removing the missing data, the treatment of outliers was done involving univariate and multivariate outlier. For univariate, researcher need to observe the standardized Z-value of all critical success factors, and if the standard score for a large size (greater than 80) is +/- 4, it will be considered an outlier (Hair et al., 2014). For this, no data was removed due to univariate outliers. Next, the multivariate analysis was conducted via Mahalanobis d-square distance that if the result of p-value <0.05 indicated it as a multivariate outlier. For this, six sets of data were removed.

Table 4
Multivariate Outlier screening result

RESPONDENT	Z-SCORE	MAHALANOBIS	P -VALUE
14	-1.344	15.06	0.02
37	1.22	12.88	0.04
56	-0.61	13.69	0.03
88	-0.71	12.23	0.02
112	0.07	10.09	0.01
139	-1.19	14.72	0.00

Normality Test: In this test, three measurement criteria to identify normality of the data are measured from skewness, Critical ratio for skewness and Critical ratio for kurtosis (Hair et al., 2014; Field, 2017).

Table 5
Summary of Normality Test

NORMALITY TEST	REQUIREMENT VALUE	MAXIMUM VALUE	NORMALITY
Skewness	+ / - 1	0.54	Normally Distributed
Critical ratio (CR) for skewness	+ / - 3	-2.27	Normally Distributed
Critical ratio (CR) for kurtosis	+ / - 7	-3.06	Normally Distributed

Non- Response Bias: The method to analyze the non-response bias is by dividing the data into an early response and late response, depending on the questionnaire received from respondents (Talib and Nizam, 2011). For this test, researcher labelled the first 50 respondents as early responders while the last 50 labelled as late responders to confirm whether the changes in surrounding or other factors within the different time frame of the data collection period can cause any differences between early and late respondents or not. Chi Square test was done to measure individual demography while t -test was done for individual construct. The required p-value has to be more than 0.05 to be considered as non-bias.

Table 6
Chi Square test result for demography

ITEMS	χ^2 Value	p-value	Significant
Gender	0.067	.761	Not significant
Sector	0.121	.937	Not significant
Number of employees	3.732	.279	Not significant
Position	3.310	.326	Not significant
Length of service in current organization	2.477	.489	Not significant
Working experience in industries	1.623	.761	Not significant
Involvement in IMI	3.370	.246	Not significant
IMI implement	7.512	.528	Not significant

Table 7
T-test result for CSF construct

CSF	p-value	Significant
Top Management Commitment	.419	Not-sig
Training & Education	.677	Not-sig
Leadership	.285	Not-sig
Organizational Culture	.553	Not-sig
Communication	.091	Not-sig
Competence & Expertise	.614	Not-sig
Performance Measurement	.280	Not-sig
Client & Supplier Focus	.442	Not-sig
Continuous Improvement	.579	Not-sig

Common Method Bias: refers to the deviation in survey response due to a common method for data collection. The indicator to measure the existence of this bias is when one principal factor accounts for majority of the total variance is more than 50% (Podsakoff et al., 2003). As shown in table 8, there is no common method bias.

Table 8
Common method bias result

The highest percentage variance of principles factor (A)	Total Percentage variance (B)	Ratio (R) (R = A/B * 100%) R < 50%	Results
14.661	96.310	15.23	Accepted

4.3 Validation of CSF model (Stage II)

After done with SPSS analysis, the process was then proceeded to Stage II. A research model analysis needs to be conducted using Structural equation modelling (SEM) (Talib and Nizam, 2011) which the discussion's flow for this model is based on *reflective-formative type hierarchical latent variable model* (Field, 2017). In this analysis, there are two parts involved as illustrated in table 9

Table 9
PLS SEM Analysis

PART A	PART B
Measurement Model	**Structural Model**
To validate and assess the reliability of each construct along with its indicators (items)	To evaluate the relationship between one latent construct with another

4.3.1 Part A - Measurement model analysis

In this study, the type of measurement model is reflective-formative second order hierarchical model, as shown in Figure 4.1. In this analysis process, there are three main steps involved in measuring the reflective model. These steps were done to test the internal reliability (IR), convergent validity (CV), and discriminant validity of all items in the measurement scale.

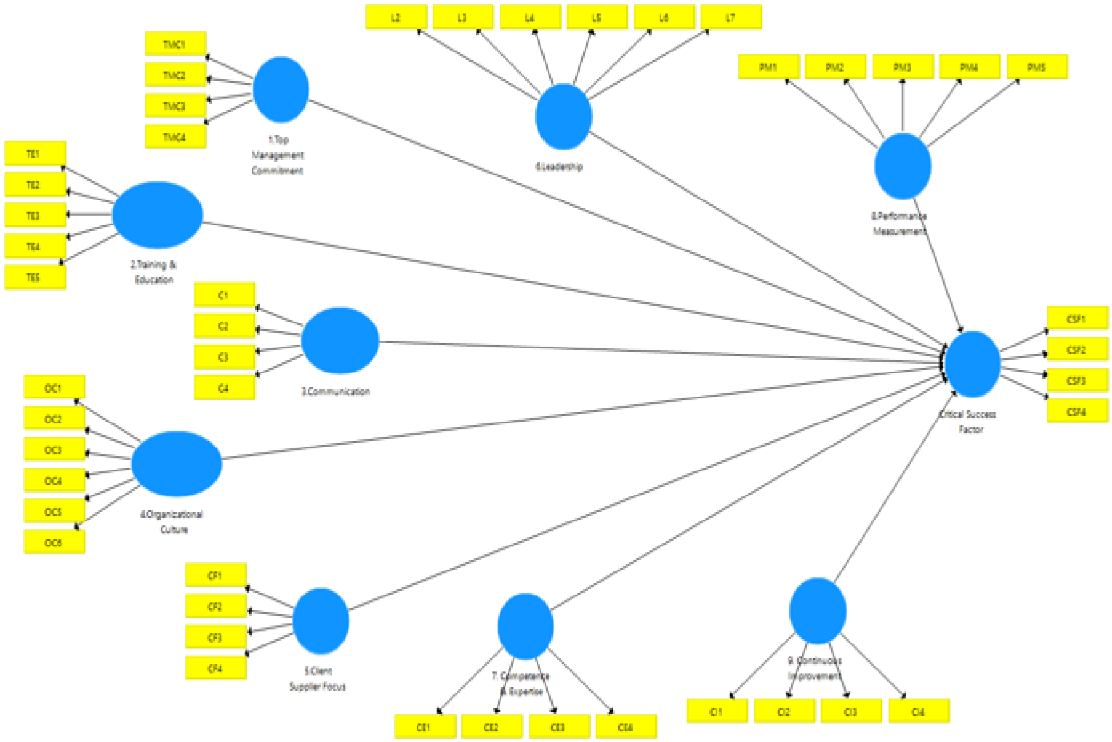

Fig. 1. Reflective-Formative 2nd Order Hierarchical Model generated by PLS-SEM

Internal Consistency Reliability: the reliability of the CSFs is tested using Cronbach's Alpha (CA) and Composite Reliability (CR) where the CA value should be above 0.7 while the CR should exceed 0.7 (Hair et al., 2014).

Convergent Validity: The validity of the CSFs is tested using Outer Loading (OL) and Average Variance Extracted (AVE). The AVE value should exceed 0.5 while the indicators with very low OL (below 0.40) should always be eliminated from the model (Hair et al., 2014). Table 10 below shows the final result generated by Smart PLS.

Table 10

Results for Reliability and Validity

Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
1.TMC	0.855	0.879	0.892	0.676
2.TE	0.888	1.008	0.914	0.722
3.L	0.757	0.923	0.888	0.515
4.OC	0.828	0.944	0.864	0.529
5.C	0.854	1.151	0.901	0.706
6.CE	0.783	0.853	0.839	0.584
7.PM	0.876	0.890	0.902	0.654
8.CSF	0.813	0.819	0.876	0.638
9.CI	0.712	0.744	0.815	0.531
CSF	0.834	0.836	0.886	0.664

Discriminant Validity: The last step in measurement model analysis was assessing the discriminant validity. The discriminant validity was conducted to examine whether one factor is distinct from another by comparing the value of the square root of Average Variance Extracted (AVE) of the factor with the square of the correlation estimate between other factors (Fornell and Larcker, 1981). For that, HTMT Ratio value was observed to check for any discriminant. Table 11 shows the result.

Table 11

Heterotrait-Monotrait Ratio (HTMT) from Smart PLS

Heterotrait-Monotrait Ratio (HTMT)

	1.TMC	2.TE	3.L	4.OC	5.C	6.CE	7.PM	8.CSF	9.CI	SIG
1.TMC										
2.TE	0.080									
3.L	0.246	0.122								
4.OC	0.733	0.110	0.220							
5.C	0.136	0.180	0.169	0.074						
6.CE	0.503	0.085	0.132	0.705	0.059					
7.PM	0.154	0.132	0.102	0.113	0.618	0.114				
8.CSF	0.141	0.084	0.632	0.225	0.157	0.198	0.088			
9.CI	0.089	0.155	0.364	0.197	0.218	0.171	0.152	0.405		
SIG	0.143	0.120	0.750	0.271	0.174	0.237	0.146	0.779	0.741	

Based on these three data analysis results, the measurement model for second order reflective-formative model (internal consistency, convergent validity, and discriminant validity) fulfilled all required criteria. Thus, the measurement model of critical success factors is all reliable and valid which then proceed to structural model evaluation.

4.3.2 Part B - structural model analysis

Once done with Part A, a PLS-SEM structural model evaluation was used to examine the model's predictive capabilities and relationship between the CSFs (Hair, 2014). This evaluation includes collinearity test (VIF), path coefficient analysis, coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2)

Collinearity Test: There are two types of VIF needed to assess namely outer VIF and inner VIF. The outer VIF is to determine the presence of collinearity among the items of every factor (Ringle et al., 2011) where the values for each of the item should be less than 5.0 and if VIF exceed

5.0, it indicates potential collinearity problem (Ringle et al., 2011).

Table 12
Outer VIF

CSF	CODE	ATTRIBUTE	VIF
Top Management Commitment	TMC1	Work process restructure	3.541
	TMC2	Business Strategy	1.991
	TMC3	Resources	1.631
	TMC4	HR management	2.767
Training & Education	TE1	IMI knowledge	2.262
	TE2	Share improvement goals	3.262
	TE3	Daily practice	2.883
	TE4	IT training	1.787
Leadership	L1	Work Prioritization	1.791
	L2	Organizational Readiness	REMOVED
	L3	Strategic Planning	1.371
	L4	Influencer	2.118
	L5	Encourage Staff	2.076
	L6	Management Skills	REMOVED
Organizational Culture	OC1	Unified commitment	2.050
	OC2	Bottom-up initiatives	2.587
	OC3	Decentralized structure	REMOVED
	OC4	Zero bureaucracy	1.857
	OC5	Incentive	2.296
	OC6	Public Recognition	3.069
Communication	C1	Less formalize	2.408
	C2	Clear explanation	1.821
	C3	Coordinated message	3.063
	C4	Staff Involvement	1.983
Competence & Expertise	CE1	Expert Monitoring	1.598
	CE2	Well-versed in IMI	2.048
	CE3	Improve coordination	1.272
	CE4	Benchmarking	2.009
Performance Measurement	PM1	Workplace Assessment	1.816
	PM2	Work tracking	3.169
	PM3	Improvement reports	2.052
	PM4	Learn from others	1.608
	PM5	Job satisfaction	3.033
Client & Supplier Focus	CSF1	Supplier relationship	1.862
	CSF2	Client Focus	1.453
	CSF3	resource utilization	1.825
	CSF4	Share of knowledge	1.796
Continuous Improvement	CI1	SQM	1.791
	CI2	Input and feedback	1.215
	CI3	Systematic process	1.371
	CI4	Process-based	1.499
Critical Success Factor	SIG1	Importance	2.199
	SIG2	Reference point	1.875
	SIG3	Avoid Bias	2.024
	SIG4	Structured decision	1.782

Table 13
Inner VIF

Inner VIF Values

	1.TMC	2.TE	3.L	4.OC	5.C	6.CE	7.PM	8.CSF	9.CI	CSF
1.TMC										1.765
2.TE										1.085
3.L										1.608
4.OC										2.311
5.C										1.624
6.CE										1.547
7.PM										1.562
8.CSF										1.556
9.CI										1.168
CSF										

Path Coefficient: The assessment of the relevance and significance of the structural model was done by analyzing the path coefficient estimates and the hypothesized relationships among the CSFs. The path coefficients have standardized values between -1 and +1 which values of +1 means strong positive relationships while -1 means strong negative relationships (Hair, 2014). Then, researcher have to determine the significance of those coefficients by analyzing both t values and p values for the structural path (Hair, 2014).

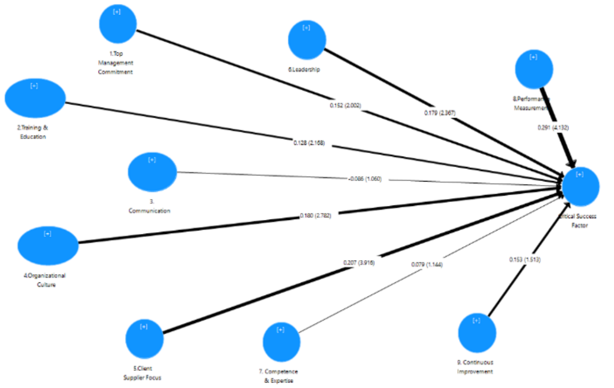

Fig. 2. Bootstrapping Results for Formative 2nd Order Structural Model

The bootstrapping results show that, there is a direct relationship between all CSFs. However, there are three factors that are not significant for the path coefficient. The highest path coefficient and significant value is the relationship between performance measurement and critical success factors where the path coefficient, β and T values are 0.291 and 4.132 respectively. On the other hand, the lowest path coefficient and significant value is the relationship between communication and critical success factors whereby the β and T values are 0.086 and 1.060 respectively. Meaning, out of nine factors in the model path, only six of the paths are significance.

Coefficient of determination: Researcher then has to assess the level of determinant coefficient (R^2) to know how accurate the model predictivity. The R^2 represents the exogenous latent variables' combined effect on the endogenous latent variable (CSF). Several references explained the threshold value that has to meet to pass the R^2 evaluation (Hair, 2014; Shiau et al., 2019).

Table 14
R2 result generated by Smart PLS.

Endogenous latent variable	R^2	Predictive Accuracy Level
Critical Success Factor	0.562	Moderate

Effect Size: This value was used to find out whether there were any changes on the R^2 value if a particular factor is removed from the model and produce substantive effects on the endogenous CSFs. For that, there are two methods to find the value of F^2, one is by using the formula below, while the other is derived from Smart PLS:

$$F^2 = (R^2 \text{ included} - R^2 \text{ excluded}) / (1 - R^2 \text{ included})$$

As reference, the value of F^2 0.02 to 0.15 indicates small effects, 0.15 to 0.35 as medium effects and values above 0.35 indicates large effects.

Table 15
F^2 result

Relationship	Effect Size, F^2	Path Coefficients
Top Management Commitment	0.037	0.156
Training & Education	0.038	0.133
Leadership	0.026	0.035
Organizational Culture	0.056	0.168
Communication	0.089	0.194
Competence & Expertise	0.047	0.172
Performance Measurement	0.021	0.060
Client & Supplier Focus	0.125	0.289
Continuous Improvement	0.045	0.153

Predictive Relevance: The last procedure in evaluating the structural model is to measure the Stone-Geisser's Q^2 value. This measure is an indicator of the model's predictive power or predictive relevance in which the Q^2 value is obtained by using Blindfolding procedures equipped in Smart PLS for a specified omission distance of values between 5 to 10 (Geisser, 1975; Stone, 1974). In this evaluation, for $Q^2 > 0$, it means that the model has good predictive relevance for certain construct while $Q^2 < 0$ represents lack of predictive relevance. The result is as shown in table 16 below:

Table 16
The blindfolding result for predictive relevance

Construct Crossvalidated Redundancy

Total | Case1 | Case2 | Case3 | Case4 | Case5 | Case6 | Case7

	SSO	SSE	Q² (=1-SSE...
1.Top Management Commitment	572.000	572.000	
2.Training & Education	715.000	715.000	
3. Communication	572.000	572.000	
4.Organizational Culture	858.000	858.000	
5.Client Supplier Focus	572.000	572.000	
6.Leadership	858.000	858.000	
7. Competence & Expertise	572.000	572.000	
8.Performance Measurement	715.000	715.000	
9. Continuous Improvement	572.000	572.000	
Critical Success Factor	572.000	327.019	0.428

Thus, based on the results generated through Smart PLS for the Coefficient of Determination (R^2), Effect Size (F^2) And Predictive Relevance (Q^2), the reference model of CSFs for improvement initiative fulfilled most of the requirements for the structural model analysis. Figure .3 shows the finalized reference model which consists of nine critical success factors and 39 attributes.

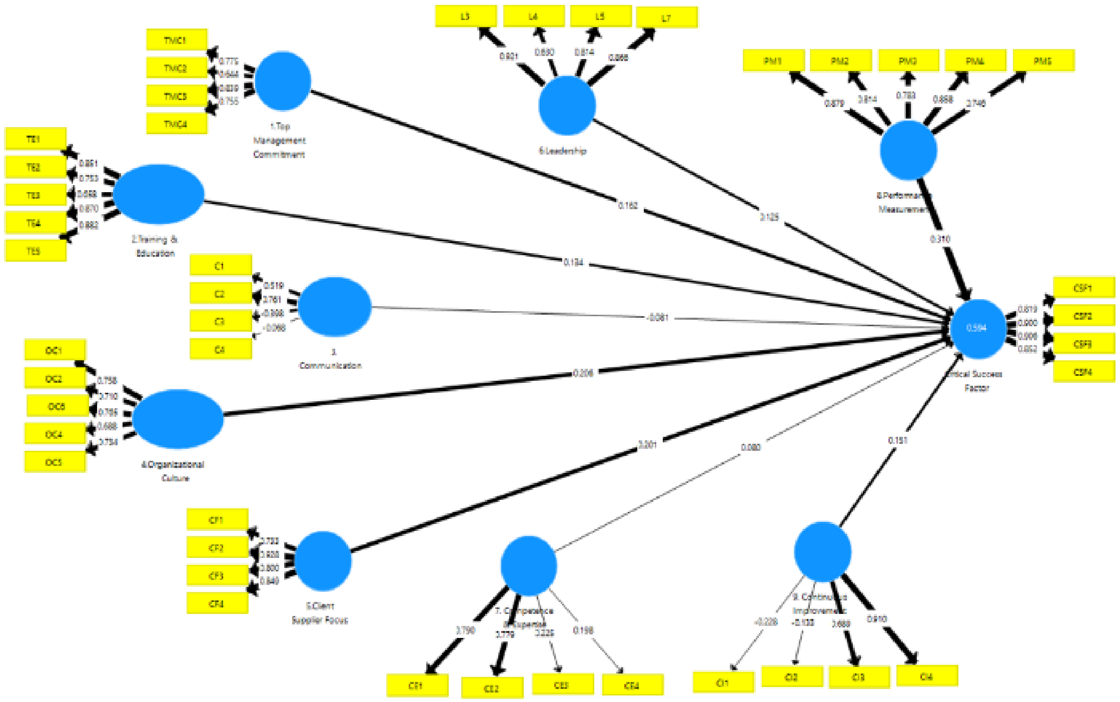

Fig. 3. Critical Success Factor Model for Improvement Initiative (IMI)

5. Conclusion

As a conclusion, this research proposes a model as a reference point of critical success factors by providing comprehensive list of critical success factors to facilitate decision-makers to make preparation and equipment when deciding to implement an IMI. The findings from this study provide a holistic view of key element by providing CSFs and its attributes derived from the rigorous literature searching. The comprehensive factors integrated into a comprehensive CSF model enables IMI practitioners and business managers to have additional detailed insights regarding CSFs shared by wide angle perspective of established researchers. This overcomes the perceived weakness or lack of the past models which only focus on the CSF for specific IMI, in which it can prone to one angle side of view. The researcher believe that the final model proposed in this study also encourages decision makers to take a wide view and consider all the key factors when started to deploy the respective improvement initiative. It provides the users with comprehensive CSFs within a structured and formalized evaluation process, assist users to structure and compile useful information needed, and reach a consensus decision with confidence.

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