A Study of the Factors Affecting User Satisfaction in EDISON Platforms

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1. Introduction

- The Korea Institute of Science and Technology Information (KISTI) has been promoting the latest science and technology adaptations for science and technology university students, and has positively impacted science and engineering education and research.
- To use the EDISON platform efficiently, it is necessary to grasp the quality characteristics of the platform and to know how the quality characteristics affect actual user satisfaction.
- In this study, we have reconstructed a successful model of information system to make it appropriate for the computational science platform.
- We then conducted an empirical study focusing on users of the EDISON platform actually served through the EDISON Project.
- Based on these findings, we developed our proposals and presented the direction of future research.

2. Reconstruction of Volumetric Models

- EDISON Project
  - The ongoing EDISON project at KISTI combines basic scientific computing technology for education and research in the science and engineering fields.
  - The project develops the national computational science and engineering SW and applies them to a web-based curriculum.
  - The EDISON project has built an open EDISON platform and integrates information system services of seven computational science and engineering fields.
  - As of June 2018, the EDISON platform has about 549 kinds of educational SW and about 760 kinds of contents being used by about 60,000 people.

EDISON
Everything for Computational Science & Engineering
www.edison.re.kr

Applied Disciplines

- Platform Quality Factors
  - There has been a lot of research on use-quality factors in the field of information systems. [1][2][3]


- In this study, we investigated prior research on the use quality of information-system service.
- The more appropriate the information system is for the user's purpose, the greater the user's satisfaction and the greater the performance of the individual which, in turn, increases the performance of the organization.[4]
- The researchers analyzed more than 150 papers published in middle scholarly journals citing the existing IS Success Model (DeLone and McLean, 1992) and reconstructed the IS Success Model.
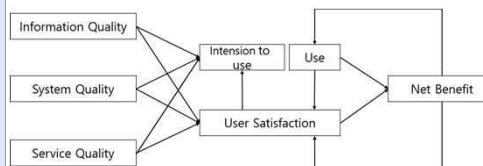
## 3. Research Model and Analysis Method

- Research Model
  - Information Quality: Information that provide instruction on how to use the platform
  - System Quality: The evaluation index for running the simulation on the platform
  - Service Quality: The reliability and accuracy of response to requests and inquiries
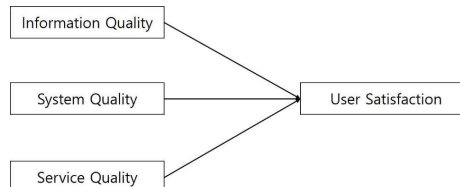
- Analysis Method
  - The participants of the 7th EDISON SW Utilization Contest(2018.02)
  - The statistical analysis program(SPSS)

244 attendees → 164 attendees
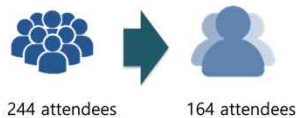
4. Analysis Result

- The quality of the computational science engineering platform can explain or influence about 55.3% of the variations in user satisfaction.
- As such, it was found using this model that information, system, and service quality of the computational science and technology platform have a significant influence on user satisfaction.
- User satisfaction of the EDISON platform tended to be higher as the quality of the system and information services increased.
- As such, the quality of information has a relatively higher influence on user satisfaction.

Model	R	R squared	Modified R squared	Standard error of estimate	Durbin-Watson
1	.743a	0.553	0.544	0.80258	1.638

Model	Non-standardization factor		Standardization factor	t	p-value	Collinearity statistic	
	B	Standard error	Beta			Tolerance	VIF
Constant	.192	.342		.561	.576		
Simulation Quality (System)	.246	.073	.227	3.361	.001	.615	1.627
Contents Quality (Information)	.578	.093	.480	6.180	.000	.463	2.161
Service Quality	.141	.071	.140	1.991	.048	.565	1.769

5. Conclusion

- system, information, and service quality all affected the satisfaction of users accessing the EDISON platform.
- The first analysis using the IS Success Model
- The opportunity to understanding of the quality characteristics of the EDISON platform
- The limit of this research is that it reflects only the quality characteristics of the success factors of DeLone and McLean's (2003) information system and has not measured and researched characteristics other than the three quality characteristics. In future research, we will confirm the quality level of the EDISON platform from various perspectives. We will be able to contribute to the development and operation of the platform in the future if we study further and supplement other quality characteristics, in addition to three quality factors used in this study.
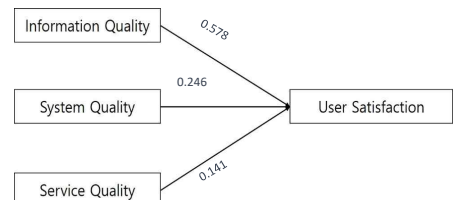
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