

**USER SATISFACTION OF THE STUDENT INFORMATION  
SYSTEM (SIS) MODEL: A CASE STUDY OF THE  
POSTGRADUATES IN A MALAYSIA UNIVERSITY**

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## AUTHOR DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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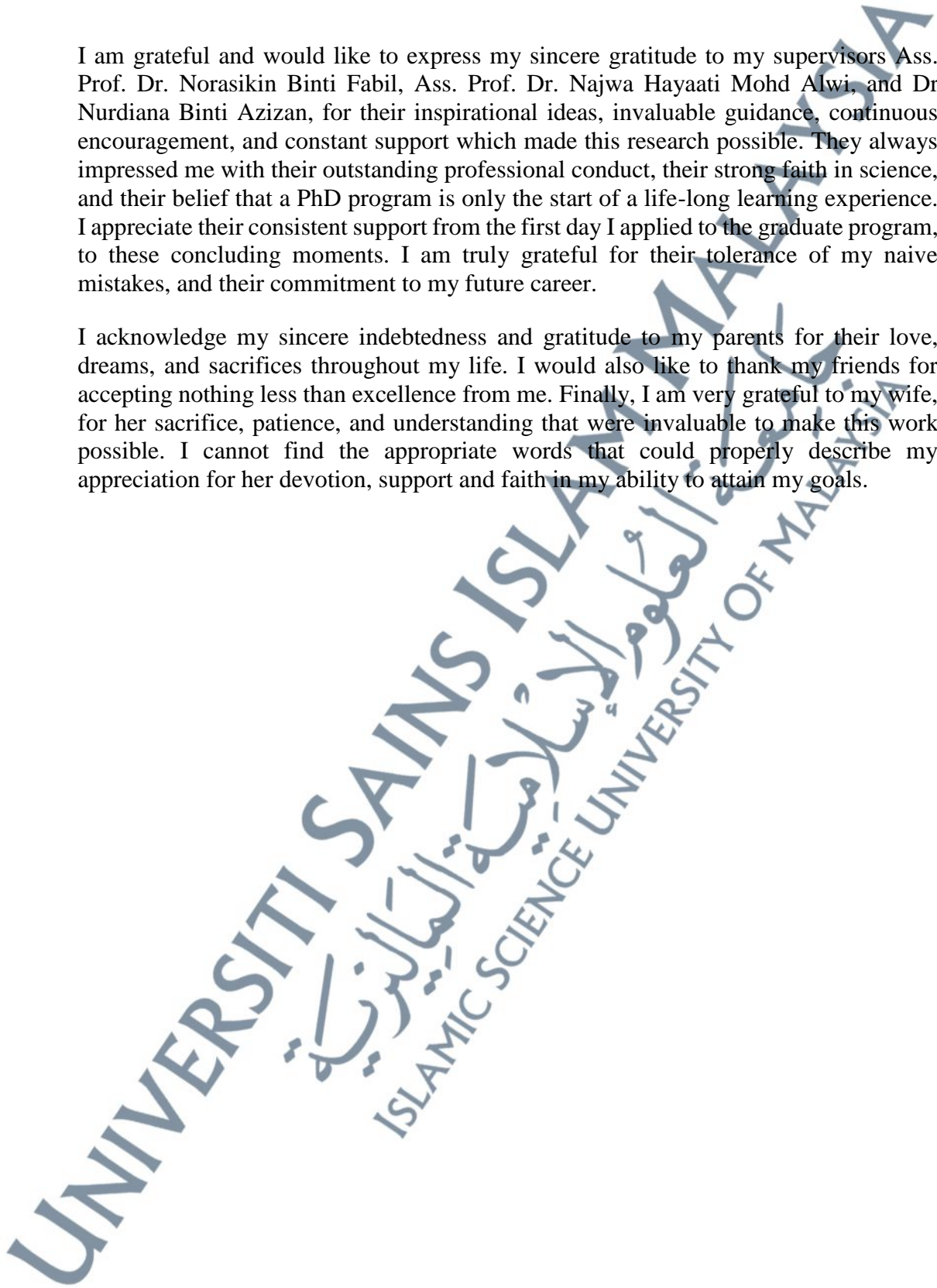
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## ABSTRAK

Sistem maklumat pelajar (SIS) adalah aplikasi perisian yang digunakan untuk menguruskan data pelajar di institusi pendidikan. SIS menyediakan keupayaan untuk memasuki pangkalan data universiti dan memeriksa hasil pelajar, rekod disiplin, dan skor penilaian lain yang berkaitan dengan pelajar, dan untuk meningkatkan komunikasi antara universiti, pensyarah, dan pengurusan universiti. SIS juga penting untuk membuat keputusan yang berkaitan dengan pelajar, pensyarah, jabatan, fakulti, dan kurikulum. Memiliki sistem yang berkualiti sangat penting kerana akan mendorong pengguna untuk mempunyai hasrat untuk menggunakan dan memberikan kepuasan kepada pengguna. Namun, terdapat tinjauan kajian yang menunjukkan penggunaan dan pernyataan kualiti SIS yang tidak memuaskan, seperti kandungan yang tidak lengkap, antaramuka sukar digunakan, dan navigasi antara halaman adalah rumit. Oleh itu, penyelidikan ini bertujuan untuk mengenal pasti faktor kualiti untuk SIS dan untuk menyelidiki hubungan antara hasrat untuk menggunakan dan kepuasan pengguna, dan juga mencadangkan model faktor kualiti yang mempengaruhi hasrat untuk menggunakan SIS berdasarkan Model DeLone dan McLean. Faktor-faktor sistem kualiti telah dikenal pasti melalui analisis sistematik dalam tinjauan literatur. Penyelidikan berpendekatan kuantitatif ini menggunakan SPSS dan AMOS untuk analisis data dan membina model. Model diuji dengan menggunakan Structural Equation Modeling (SEM). Soal selidik dibina dan diedarkan dalam kalangan pelajar pascasiswazah universiti, yang dipilih berdasarkan teknik persampelan mudah bukan kebarangkalian. Penyelidikan ini mengenal pasti lapan faktor kualiti iaitu kegunaan, fungsi, fleksibiliti, kemudahan, kualiti data, responsif, kebolehcapaian, dan ketepatan masa. Hasil pengukuran pemodelan persamaan struktur dan nisbah kritikal (CR) digunakan untuk mengesahkan setiap hipotesis. Hasil hipotesis telah disahkan satunya iaitu hubungan antara kualiti sistem dan kepuasan pengguna SIS (CR = 4.469), antara kualiti sistem SIS dan hasrat untuk menggunakan SIS (CR = 5.241), dan antara hasrat untuk menggunakan SIS dan kepuasan pengguna (CR = 3.826). Selain itu, hasil kajian juga menunjukkan bahawa hasrat untuk menggunakan SIS berperanan sebagai perantara antara kepuasan pengguna dan kualiti sistem. Hasil pemodelan menunjukkan hubungan signifikan dan perkaitan yang kuat antara tiga pemboleh ubah ( $r > 3$ ) iaitu kualiti sistem, hasrat untuk menggunakan, dan kepuasan pengguna. Penyelidikan ini juga mengkaji kesan pelaksanaan ciri-ciri Islam dalam SIS dan kesannya terhadap hasrat dan kepuasan pengguna. Sumbangan utama penyelidikan ini adalah perkembangan Teori Model Kualiti SIS dan praktikalnya untuk diaplikasikan dalam merekabentuk SIS bagi institusi pendidikan Malaysia. Justeru, hasil kajian ini boleh menjadi panduan kajian berkaitan faktor kualiti dan kepuasan pengguna terhadap SIS pada masa akan datang dan seterusnya membantu sektor dan institusi pendidikan tinggi dalam mengukur dan meningkatkan kualiti pelaksanaan sistem maklumat pelajar.

## ABSTRACT

Student information systems (SISs) are software applications for managing student data in educational institutions. SISs enable entry to the database of the university to check students' results, discipline records, and other assessment scores. A SIS enhances communication between the university, lecturers, and managers. SISs are also an important element in the decision-making processes relating to the students, lecturers, departments, faculties, and curriculum. Having a quality SIS is essential to provide satisfaction to the users and encourage their intention to use the system. However, many previous studies have identified unsatisfactory SISs regarding the lack of a quality system, including incomplete content, difficult to use interface, and complex navigation between pages. This research has identified, via a literature review, the quality factors for an SIS, namely, usability, functionality, flexibility, convenience, data quality, responsiveness, accessibility, and timeliness. It has proposed a model for how these quality factors influence the intention to use the SIS based on DeLone and McLean's Model (2003). It has also investigated the relationships between the intention to use and user satisfaction. The research used a quantitative approach using SPSS for data analysis and AMOS for developing the model. The model was tested using Structural Equation Modelling (SEM). A survey questionnaire was developed and distributed among the postgraduate students from University Science Islam Malaysia, who were selected on the basis of a nonprobability convenience sampling technique. The results of the SEM and critical ratio (CR) measurements were used to test and verify three hypotheses. All three hypotheses were confirmed with a high degree of confidence: firstly, there was a statistical relationship between system quality and user satisfaction with the SIS, secondly, between system quality of SIS and intention to use, and thirdly between the intention to use the SIS and user satisfaction. The results showed that the intention to use the SIS played a mediating role between user satisfaction and system quality. Modelling results showed significant correlation and strong association between the three variables. This research also investigated the effects of the implementation of Islamic features in the USIM SIS and examined the effects on the intention to use and satisfaction of the users. The main contribution of this research is the enhancement of the theoretical underpinning of the SIS quality model and its practical application to the design of SISs for Malaysian educational institutions. The findings of this research can assist the Malaysian higher-education sector and universities to measure and improve the quality of their SISs.

## AL-MULAKHAS

نظم معلومات الطلاب (SIS) هي تطبيقات برمجية يتم تطبيقها لإدارة بيانات الطلاب في المؤسسات التعليمية. توفر SIS قدرات لإدخال قاعدة بيانات الجامعة وفحص نتائج الطلاب، وسجل الانضباط، وغيرها من درجات التقييم المرتبطة بالطلاب، ولتعزيز التواصل بين الجامعة والمحاضرين وإدارة الجامعة. تعتبر SIS مهمة أيضًا لاتخاذ القرارات المتعلقة بالطلاب والمحاضرين والأقسام والكليات والمناهج الدراسية. يعد وجود نظام جودة أمرًا ضروريًا لأنه سيثبث المستخدمين على نية الاستخدام وتوفير الرضا للمستخدمين. ومع ذلك، أظهرت العديد من الدراسات السابقة الاستخدام غير المرضي لنظام SIS والحجج المتعلقة بعدم وجود نظام جودة مثل المحتوى غير المكتمل، والواجهة صعبة الاستخدام، والتنقل بين الصفحات معقد. وبالتالي، يهدف هذا البحث إلى تحديد عوامل الجودة لنظام SIS واستكشاف العلاقات بين نية الاستخدام ورضا المستخدم، وكذلك اقتراح نموذج يتعلق بعوامل الجودة التي تؤثر على نية استخدام SIS بناءً على DeLone و McLean. تم تحديد عوامل نظام الجودة من خلال المراجعة والتحليل المنهجي. يستخدم البحث مقارنة كمية تستخدم SPSS و AMOS لتحليل البيانات ولتطوير النموذج. تم اختبار النموذج باستخدام نمذجة المعادلات الهيكلية (SEM). تم تطوير استبيان الاستطلاع وتوزيعه على طلاب الدراسات العليا في الجامعة الذين تم اختيارهم على أساس تقنية أخذ العينات الراحة. حدد البحث ثمانية عوامل الجودة، وهي قابليتها للاستخدام، والوظيفة، والمرونة، والراحة، وجودة البيانات، والاستجابة، وسهولة الوصول، وحسن التوقيت. تُستخدم نتائج نمذجة المعادلة الهيكلية وقياس النسبة الحرجة (CR) للتحقق من صحة كل فرضية. نتائج جميع الفرضيات - العلاقات بين جودة النظام ورضا المستخدم (SIS) (CR = 4.469)، وبين جودة نظام SIS والنية لاستخدام (SIS) (CR = 5.241) وبين نية استخدام SIS ورضا المستخدم - (CR = 3.826) تم التحقق منها جميعًا. علاوة على ذلك، أظهرت النتائج أن نية استخدام SIS تلعب دور الوسيط بين رضا المستخدم وجودة النظام. تبحث مناقشة هذا البحث أيضًا في تأثير تطبيق الخصائص الإسلامية في SIS وتفحص تأثيرها على نية المستخدمين ورضاهم. أظهر عرض النتائج ارتباطًا قويًا بين المتغيرات الثلاثة - جودة النظام، نية الاستخدام، ورضا المستخدم. جميع الارتباطات أكبر من  $0.3$ ، وهو المعيار للنظر في تأثير كبير بين هذه المتغيرات، وجميع الارتباطات ذات دلالة إحصائية. يمكن لنتائج هذا البحث توجيه البحوث المستقبلية حول عوامل الجودة الهامة التي تؤثر على رضا المستخدم على SIS. تساعد النتائج أيضًا في صنع القرار في قطاع التعليم العالي ومساعدة الجامعات الماليزية على قياس أنظمتها وتحسين جودة أدائها. المساهمة الرئيسية لهذا البحث هي تعزيز نظرية نموذج جودة SIS وحقيقة أنه يمكن تطبيقها عمليًا لتصميم SIS للمؤسسات التعليمية الماليزية.

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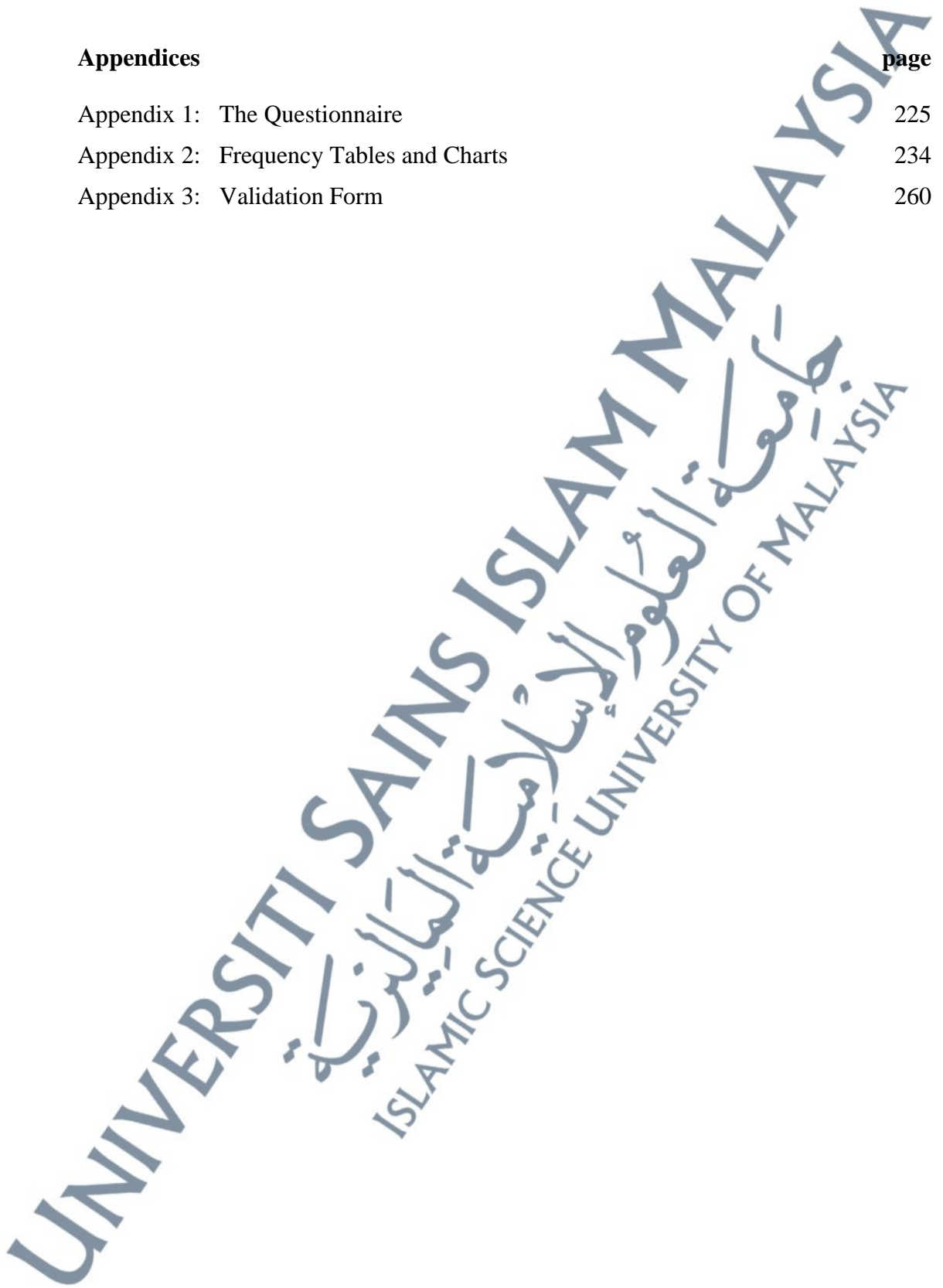
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## LIST OF ABBREVIATIONS

USIM	University science Islamic Malaysia
SIS	Student Information Systems
SUMS	Smart University Management System
IS	Information Systems
IT	Information Technologies
ICT	Information and Communication Technologies
WCAG	Web Content Accessibility Guidelines
WAI	Web Accessibility Initiative
CGS	The Centre for Graduate Studies
ATs	Assistive Technologies
TRA	Technology Readiness Assessment.
TAM.	Technology Acceptance Model
IQ	Intelligence Quotient
UTAUT	Unified Theory of Acceptance and Use of Technology
TRA	Theories of Reasoned Action
A	Attitude
BI	Behavioral Intention-to-use
AU	Actual use
E	Ease
U	Usefulness
D&M IS	DeLone & McLean Information Systems
AMOS	Analysis of Moment Structures
SEM	Structural equation modelling
DV	Dependent Variable
IV	Independent Variable
SPSS	Statistical Package for the Social Sciences
CMIN	Contrast Media-Induced Nephropathy
DF	Degrees of Freedom
GFI	Goodness of Fit Index
AGFI	Adjusted Goodness of Fit Index
NFI	Normed Fit Index
RFI	Relative Fit Index

CFI.	Comparative Fit Index
RMSEA	Root Mean Squared Error of Approximation
PCFI	Parsimonious Comparative Fit Index
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
CR	Critical Ratio
SQ	System Quality
SAT	Satisfaction

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