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An Evaluation Study of *Safeer2* System's Usability from the Perspective of Its Saudi Scholarship Student Users in Light of Digital Transformation Strategies

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Abstract:

This study aimed to evaluate Safeer2 system's usability from the perspective of its Saudi scholarship student users as well as provide suitable suggestions and recommendations for improving its usability in light of digital transformation strategies. An evaluative research method was applied to Safeer2 system from a user-centered perspective. The study population included all Saudi scholarship students in the United Kingdom during the 2024 academic year from which a convenience sample consisting of 231 students was selected. To collect data, a survey questionnaire was prepared to evaluate Safeer2 system's usability from the perspective of participant Saudi students covering following the scholarship eleven major factors/dimensions, i.e. effectiveness, system performance, ease of navigation, information quality, error tolerance, privacy, system

customization, learnability, accessibility, support and communication, and overall satisfaction. Following data analysis, the study results revealed that the overall mean score of the questionnaire respondents was 3.379, thus highlighting a "moderate" usability level for Safeer2 system as a high-tech information system as perceived by its users. Notably, three dimensions, respectively, enjoyed a "high" usability level: effectiveness, privacy, and overall satisfaction while the remaining eight dimensions had a "moderate" usability level. Furthermore, significant differences were found in participant Saudi scholarship students' perceptions regarding Safeer2 system's usability based on their own demographic variables: gender, current scholarship status, and Safeer2 system's use duration. Overall, the study found a plethora of strengths for Safeer2 system's usability side by side with a number of weaknesses and areas of improvement. Based on such findings, some suggestions and recommendations were eventually proposed to enhance Safeer2 system's usability in the foreseeable future, particularly focusing on improving the quality of delivered information, provision of a better support level, and enhancing accessibility.

Keywords: Usability, Digital Transformation, Information Systems Success, *Safeer2* System.

دراسة تقييمية لسهولة استخدام نظام سفير ٢ من وجهة نظر مستخدميه من طلاب المنح السعوديين في ضوء استراتيجيات التحول الرقمي ياسر ناصر الصالح

الملخص:

هدفت هذه الدراسة إلى تقييم قابلية استخدام نظام Safeer2 من وجهة نظر مستخدميه من طلاب المنح السعوديين، بالإضافة إلى تقديم اقتراحات وتوصيات مناسبة لتحسين قابلية استخدامه في ضوء استراتيجيات التحول الرقمي. تم تطبيق منهج بحث تقييمي على نظام Safeer2 من منظور يركز على المستخدم. شمل مجتمع الدراسة جميع طلاب المنح

السعوديين في المملكة المتحدة خلال العام الدراسي ٢٠٢٤، حيث تم اختيار عينة ملائمة مكونة من ٢٣١ طالبًا. لجمع البيانات، تم إعداد استبيان لتقييم قابلية استخدام نظام

Safeer2 من وجهة نظر طلاب المنح السعوديين المشاركين، والذي يغطي العوامل/الأبعاد الرئيسية الأحد عشر التالية، وهي: الفعالية، وأداء النظام، وسهولة التقل، وجودة المعلومات، وتحمل الأخطاء، والخصوصية، وتخصيص النظام، وقابلية التعلم، وجودة المعلومات، وتحمل الأخطاء، والخصوصية، وتخصيص النظام، وقابلية التعلم، الرمكانية الوصول، والدعم والتواصل، والرضا العام. بعد تحليل البيانات، كشغت نتائج الدراسة أن متوسط الدرجات الإجمالية للمستجيبين للاستبيان كان ٢٠٣٩، مما يسلط الدراسة أن متوسط الدرجات الإجمالية المستجيبين للاستبيان كان ٢٠٣٩، مما يسلط الموبوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية الضوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية الضوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية الضوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية الضوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية الضوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية المحوم على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية المنوء على مستوى قابلية استخدام "متوسط" لنظام Safeer2 كنظام معلومات عالي التقنية من سهولة الاستخدام: الفعالية، والخصوصية، والرضا العام، بينما اتسمت الأبعاد الثمانية من سهولة الاستخدام: الفعالية، والخصوصية، والرضا العام، بينما اتسمت الأبعاد الثمانية المتبقية بمستوى "متوسط". حلاوة على ذلك، وُجدت فروق جوهرية في تصورات طلاب المتبقية بمستوى "متوسط". حلوة على ذلك، وُجدت فروق جوهرية في تصورات طلاب المتبقية بمستوى "متوسط". حلوة على ذلك، وُجدت فروق جوهرية في تصورات طلاب المتبقية بلاب المالية الدراسية الستخدام المثاركين حول سهولة استخدام المام "منيام "سفير ". بناءً على ما معلوم الماديموغرافية: الجنس، والحالة الدراسية الحالية، ومدة استخدام المام "سفير ٢". بناءً على ما مير اليم الديموغرافية: الجنس، والحالة الدراسية الحالية، ومدة استخدام المام "منير ٢".

بناءً على هذه النتائج، طُرحت بعض الاقتراحات والتوصيات لتحسين سهولة استخدام نظام "سفير ٢" في المستقبل المنظور، مع التركيز بشكل خاص على تحسين جودة المعلومات المُقدمة.

الكلمات المفتاحية:

سهولة الاستخدام، التحول الرقمي، نجاح أنظمة المعلومات، نظام Safeer2.

I-Research Background

Introduction:

Digital transformation in the Kingdom of Saudi Arabia (KSA) is currently one of the most pivotal strategies to be focused upon in all different aspects of life as an essential starting-point to successfully accomplish its desired goals as deeply enshrined in the "*Saudi Vision* 2030" strategic roadmap and future directions, i.e. turning the kingdom into a vibrant society, a thriving economy, and an ambitious nation by the year 2030. In addition, digital transformation is also an indispensable necessity for keeping pace with the increasingly everchanging requirements of our current era of undergoing scientific and technological revolutions at an unprecedented, accelerating speed of change.

As a result, the Saudi Government has recently launched its ambitious "*Saudi Vision 2030*" and National Transformation Program (NTP) 2020 focusing on making radical, disruptive changes in all sectors to achieve the goal of increased diversification economically, socially, and culturally via improving operational processes, decision-making, and public service efficiency side by side with pushing the wheel of sustainable development in various fields (Alharbi, 2019). In this context, digital transformation strategies are currently adopted on a wide scale to improve production and institutional performance. No wonder then that digital transformation indeed represents a core pillar of the "*Saudi Vision 2030*" although it's just taking its first nascent steps (Alotaibi, 2021).

Generally, Information Systems (IS) are at the heart of digital transformation processes as they simultaneously represent both a mechanism and an output for digital transformation. With the rapid developments in Information and Communication Technologies (ICTs) and over-reliance on the Internet, governments around the world have turned to transforming their official websites into electronic portals mostly operating as fully-integrated information systems to provide their services to various beneficiaries via the Internet and supply them with all needed information (Najem et al., 2016).

In particular, *Safeer2* system was among the most prominent current areas witnessing a clear implementation of digital transformation strategies in the provision of advisory, administrative and financial services to Saudi scholarship students studying abroad via an advanced high-tech information system through which those students can receive many advisory and administrative services, thus enabling them to effectively manage all their urgent affairs overseas, whether related to academic, financial or administrative supervision service domains.

Practically speaking, *Safeer* system was first officially launched in 2008 as an extension of the King Abdullah Scholarship Program (KASP) which was previously established in 2005 and has so far sent approximately 150000 Saudi scholarship students to study abroad at various universities around the world, half of them in the United

States only. Due to the inherent difficulties of managing the multitude of complex transactions required by this large number of students through traditional, outdated methods, *Safeer2* system was launched as a more effective high-tech information system to process and manage expatriate Saudi students' applications and services delivered via different overseas Saudi Arabian cultural bureaus worldwide. Subsequently, the system was further developed into two more technically advanced versions, i.e. *Safeer1* in 2017 and, finally, *Safeer2* (https://safeer2.moe.gov.sa/Portal) in 2019 (for more details, see Albalawi, 2014; Althobaiti, 2023).

However, we should always take into account the fact that the mere launching of information systems, in itself, does not necessarily guarantee the complete accomplishment of desired digital transformation or reaching its stated end, i.e. improving service efficiency as well as increasing both effectiveness and performance. Therefore, it's high time to deeply examine all possible influencing factors that may help information systems to succeed in achieving the various goals for which they were originally designed (Barthel, 2021).

More specifically, usability is widely considered one of the most significant Critical Success Factors (CSFs) strongly determining whether information systems are successful or nor in achieving their stated goals, thus accordingly ensuring the overall effectiveness of the desired digital transformation strategy as a whole. This largely stems from the rather substantial role played by usability in enabling users to meet the desired needs of actually using such systems, increasing their productivity, improving user satisfaction, reducing errors and expenses, and enjoying value-added sustainable competitive advantages. A case in point here is that previous literature repeatedly emphasized that usability of any information system basically depends on a multitude of entangled complex factors that should be taken into consideration, such as system effectiveness and performance, learnability, clear and flexible user interface, system customization according to users' needs, security and privacy, provision of technical support, system information capacity, and quality of information provided to users (see, for example, Morville, 2004; Marcus, 2013; Jeddi et al., 2020; Costaner, 2023; Suria, 2024).

It's against such backdrop that the current study is fundamentally rooted in the digital transformation strategies currently employed by the Kingdom of Saudi Arabia adopting a user-centered perspective in evaluating *Safeer2* system's usability level in light of a number of proposed comprehensive factors/dimensions of usability based on the collected data from a selected sample of Saudi scholarship students currently enrolled into different United Kingdom universities.

Research Problem:

As mentioned earlier, *Safeer2* system is one of the many new applications of digital transformation strategies consistent with the "*Saudi Vision 2030*" roadmap for the future seeking to reach the desired digital transformation through the use of advanced digital information systems to give a helpful hand to Saudi scholarship students and provide them with all necessary advisory, administrative, and financial services. Utilizing a user-centered perspective, the current researcher noted some emerging problems hindering the effective use of *Safeer2* system in practice despite its many positive benefits, most prominently the considerable lack of clarity on some service provision requirements, difficulty in

modifying some submitted applications, limited technical support, and system slowness at times.

Notably, such close observations from the field already reinforce the results concluded by some other previous Saudi studies focusing on evaluating Safeer2 system's usability (e.g. Al-Zuabi & Al-Shaikhli, 2012; Alzomily, 2013; Albalawi, 2014). However, given the relatively outdated nature of such studies and the many ongoing developments continuously witnessed by Safeer2 as a high-tech information system within the kingdom's wider-scale digital transformation strategies, there stems a timely, urgent need for conducting a more in-depth study exploring Safeer2 system's various advantages and disadvantages from usability perspective as perceived by its own users. Consequently, the problem statement of the current study can be expressed as follows: "To evaluate Safeer2 system's usability from the perspective of its users as well as provide suggestions and recommendations suitable for its future improvement mechanisms in light of digital transformation strategies".

Accordingly, in response to the recurring recommendations recently made by a number of related previous studies to evaluate *Safeer2* system's usability from the perspective of its student users (e.g. Al-Zuabi & Al-Shaikhli, 2012; Albalawi, 2014; Najem et al., 2016), the current study was basically conducted to focus on dealing with the problem of meeting the "need for evaluating *Safeer2* system's usability from a user-centered perspective".

Research Objectives:

This study aimed to identify the main factors affecting information systems usability from user perspective in light of digital transformation strategies and evaluate *Safeer2* system's usability from the perspective of its Saudi scholarship student users (in terms of such major factors/ dimensions as effectiveness, system performance, ease of navigation, information quality, error tolerance, privacy, system customization, learnability, accessibility, support and communication, and overall satisfaction). Besides, the study also sought to reveal the differences in participant Saudi scholarship students' perceptions regarding *Safeer2* system's usability according to their demographic variables: gender, current scholarship status, and *Safeer2* system's use duration. Furthermore, the study endeavored to provide suitable suggestions and recommendations for improving *Safeer2* system's usability in light of digital transformation strategies.

Research Significance:

This study comes in the context of updating the available research information related to evaluating Safeer2 system's usability from its users' point of view as an extension of the previous studies dealing with this topic, i.e. Al-Zuabi & Al-Shaikhli (2012); Alzomily (2013); and Albalawi (2014). Notably, this current study is mostly of a practical nature and enjoys tangible applied importance in reality as it seeks to evaluate Safeer2 system's usability in terms of its different strengths and weaknesses with the aim of further improving that system and contributing to its development for the better in light of the kingdom's digital transformation strategies, which may be useful for developing Safeer2 system, improving its utilization and making kingdom's promoting the fruitful contributions to digital transformation journey in general in addition to improving both its services provided to expatriate Saudi scholarship students and the performance of overseas Saudi Arabian cultural bureaus worldwide in particular.

Research Terminology:

1-Safeer2 System:

Najem et al (2016) defined *Safeer2* system as a governmental electronic services portal used by the Saudi Ministry of Higher Education (MOHE) to facilitate reciprocal electronic communication between Saudi scholarships students and both the ministry itself and overseas Saudi Arabian cultural bureaus, fulfill their needs, and provide them with all required services in an easy manner. As a consequence, *Safeer2* system is procedurally defined in this study as a high-tech information system launched in the context of implementing the digital transformation strategies recommended by the "*Saudi Vision 2030*". It usually includes an information system for managing all the affairs of Saudi scholarship students abroad outside the Kingdom of Saudi Arabia, whether related to academic, financial or administrative supervision service domains.

2-Digital Transformation:

Digital transformation is procedurally defined in this study as one of the core pillars focused upon in the "*Saudi Vision 2030*". Oftentimes, it aims to provide a solid digital infrastructure, and enhance modern technologies use in all fields of life as an effective tool for improving delivered governmental services, and facilitating their access in a digital manner, thus positively contributing to accelerating the Saudi nascent ongoing transformation journey into fully digital institutions. Digital transformation strategies usually include, for example but not limited to, promoting digital culture, encouraging Information Technology (IT) entrepreneurship as well as providing training and education in this field.

3-Usability:

According to Nielsen (1994), usability refers to an information system's various aspects of possible concern for its user, including downloading and maintenance. As a result, usability is procedurally defined in this study as the extent to which *Safeer2* system's users find it easy to employ it as a reliable, efficient, effective tool for meeting their needs in a fruitful way improving their productivity, including user interface and system navigation design, clarity of provided information, speed of system's response, and overall user satisfaction with the total system use experience.

II-Literature Review:

This section includes an up-to-date systematic literature review and relevant previous field studies closely related to the current study topic, particularly focusing on discussing the concept, features and importance of usability. It also reviews the most important theoretical frameworks and factors/dimensions of usability. Furthermore, this section sheds further light on *Safeer2* system as a high-tech information system based on digital transformation strategies in terms of its concept, origin and development, components as well as importance and practical uses.

A-Usability Concept and Importance:

According to the International Organization for Standardization (ISO, 2018), usability can be defined as the extent to which the use of a system, product or service enables certain users to achieve specific goals, both effectively, efficiently and satisfactorily in a specific context of use. Similarly, another definition by Shojaei et al (2013) highlighted that usability usually refers to how easy for users to interact with information systems and learn this use, which can be procedurally measured by taking into account the context of

use as well as users' familiarity with information systems and their different user interfaces. Besides, usability also refers to a certain characteristic focusing on enabling interaction between users and information systems in an easy way empowering them to obtain required correct information (Ikhsanuddin et al., 2022).

Overall, there is a consensus in previous literature that usability is a critical element of information systems success. For example, Davis's (1989) Technology Acceptance Model (TAM) posited that users' intention to use information systems and their perceived usefulness are strongly influenced by their perceived ease of use. Likewise, Ajzen's (1991) Theory of Planned Behavior (TPB) considered usability a major factor decisively contributing to shaping users' behavioral intentions, thus enhancing their likelihood of adopting and relying on information systems. Furthermore, Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) classified usability as a significant factor affecting the expected performance level of technology use. It's against such backdrop that it becomes crystal clear that usability is not only limited to making information systems more accessible for users' interaction, but also plays a pivotal role in enhancing the various psychological and social factors affecting information systems acceptance by their end-users in general.

B-Usability Theoretical Frameworks:

Overall, previous literature has provided us with a number of prominent theoretical and conceptual frameworks focusing on explaining and clarifying usability in information systems context, some of which are highlighted below in detail chronologically ordered (from the oldest to the newest) as follows:

1-Information Systems (IS) Success Model (ISSM):

DeLone & McLean (1992) first proposed this model in early 1990s and later updated it based on collected field data in 2003 (see Figure 1). By all standards, it's considered one of the most common models for evaluating information systems success. It provides an integrated, multidimensional framework for their evaluation based on an innovative mix of direct and indirect impacts of information systems on both individuals and organizations alike. Overall, the model includes six main dimensions with several more detailed operational success metrics summarized by DeLone & McLean (2003) as follows: (1) System Quality: It measures how well the system performs and supports its users, including adaptability, availability, reliability, response time, and usability; (2) Information Quality: It focuses on the accuracy and completeness of the system' available information, its importance to users, and system's ability to provide valuable and high-quality information to support decisioncompleteness, making, including ease of understanding, personalization, relevance, and security; (3) Service Quality: It refers to the level of support provided by the system's technical team, response speed, and support effectiveness, including; assurance, empathy, and responsiveness; (4) Usage: It, in turn, measures the extent to which users intend or actually use the system and interact with its available features considering usage an important measurement indicator for understanding the degree of users' adoption and benefit from the system, including nature of use, navigation patterns, number of site visits, and number of transactions executed; (5) User Satisfaction: It addresses users' satisfaction with their overall experience of using the system, thus reflecting a positive response to system performance, including repeat purchases, repeat visits, and user surveys; and (6) Net Benefits: This is the ultimate goal of the model assessing the system's overall impact at both

individual and organizational levels, particularly focusing on resulting improvements in organizational performance, increased productivity, and improved decision quality, including cost savings, expanded markets, incremental additional sales, reduced search costs, and time savings.



Figure 1: Information Systems (IS) Success Model

Source: DeLone & McLean, 2003: 24

2-Nielsen's 10 Usability Heuristics (UH):

Nielsen (1994) first introduced this classical model of "usability engineering" in 1994 and later on modified it in an updated version containing a complete set of essential general rules for creating userfriendly digital interfaces. It includes ten main guidelines or "heuristics" for measuring the usability of user interface design: (1) Visibility of System Status; (2) Match Between the System and the Real World; (3) User Control and Freedom; (4) Consistency and Standards; (5) Error Prevention; (6) Recognition Rather than Recall; (7) Flexibility and Efficiency of Use; (8) Aesthetic and Minimalist Design; (9) Help Users Recognize, Diagnose, and Recover from Errors; and (10) Help and Documentation (Nielsen, 2024). Notably, this model has recently been employed in many relevant studies focusing on evaluating information systems usability (e.g. Jeddi et al., 2020; Mahfudz et al., 2022; Firmansyah & Riskinanto, 2023).

3-Information Quality Theory (IQT):

Wang & Strong (1996) formulated this widely used theory with diverse practical applications in many fields to identify some of the major factors affecting the quality of different information systems based on the notion that information is indeed the core pillar of such systems. The theory provides a systematic hierarchical four-level framework for organizing the most important information quality dimensions for data consumers: (1) Accuracy (intrinsic information quality): Information is correct, reliable and free from errors, including believability, objectivity, and reputation; (2) Relevancy (contextual information quality): Information is closely related to the tasks performed by users, including value-added, timeliness, completeness, and appropriate amount of data; (3) Representation information quality): (representational Information can be understood, interpreted and represented by users, including interpretability, ease of understanding, representational consistence, and concise representation; and (4) Accessibility (accessibility information quality): Information must be accessible and retrievable for users, including access security. More recently, a number of usability evaluation studies have employed this theory as a reference

theoretical framework. For example, Fu et al (2024) benefited from it and *User Information Satisfaction* (UIS) approach as a methodological lens for assessing the generative artificial intelligence tool ChatGPT's information quality in higher education from the perspective of Indonesian university students.

4-Cognitive Socio-technical Framework (CSF):

This framework was created by Borycki & Kushniruk (2010) to provide a holistic understanding of users' various interactions with information systems integrating two main types of common approaches to separately assessing their different impacts: Cognitive Approaches focusing on users' mental processes when interacting with information systems, e.g. attention, memory, and decisionmaking; and Socio-Technical Approaches describing, in turn, how information systems affect work environments, particularly focusing on mutual relationships and interactions between users and technology, thus allowing for a more in-depth understanding of how technology affects its social context. It calls for conducting cognitive-socio-technical analyses of information systems usability at three consecutive, hierarchical levels, namely: Cognitive Level: Individual interacting with the system; (2) Basic Workflow Level: User interacting with the system and environment to do basic work task; and (3) Organizational Level: Multiple users interacting with each other and the system to carry out multiple tasks as part of the organization. In other words, such systematic, multidimensional more comprehensive perspective framework adopts for a understanding how information systems affect not only users' individual tasks, but also the surrounding social systems in which those users integrate information systems.

5-ISO 9241-11:2018 Usability Standards Model:

These updated standards in their latest version recently published by the International Organization for Standardization (ISO, 2018) provide a systematic framework for defining the concept of usability and its practical applications in different fields of life explaining in detail how to identify the necessary information to be taken into account when specifying or evaluating the usability of human-system interactions in terms of measures of user performance and satisfaction. According to ISO standards, usability includes three main integrated dimensions: (1) (1) *Effectiveness*: It's the accuracy and completeness with which users achieve specified desired goals; (2) *Efficiency*: It indicates the resources used in relation to the results achieved from a comparative perspective, typically including time, human effort, costs, and materials; and (3) Satisfaction: It's the extent to which the user's physical, cognitive and emotional responses of comfort that result from the easy and smooth use of a system, product or service meet his needs and expectations and facilitate his effortless performance of required tasks, including the extent to which the user experience resulting from actual use meets his needs and expectations, and the fact that anticipated use can tangibly affect his own satisfaction with actual use.

It's against such backdrop that the current researcher concluded that the above-mentioned theories, models, and theoretical frameworks for conceptualizing usability already provide us with diverse insights into how to measure and improve information systems usability, each focusing on specific aspects contributing, more or less, to accomplishing the ultimate goal of promoting usability. For example, the *Information Quality Theory* (IQT) emphasized the pivotal role played by information quality as a key element of designing effective systems, thus ensuring that provided information

meets users' needs in a reliable manner. In tandem, Nielsen's 10 Usability Heuristics (UH) model provided ten various design guidelines focusing on users' practical experiences, e.g. control, freedom of choice, and error prevention, therefore enhancing their level of feeling comfort during use. Besides, the Information Systems (IS) Success Model (ISSM), in turn, clearly highlighted the impact of system, information, and service quality on user satisfaction, thus emphasizing the importance of overall system performance while the Cognitive Socio-technical Framework (CSF) strongly focused on the different social and cultural aspects of the surrounding environment in which information systems are used, especially at work environments. Finally, the ISO 9241-11:2018 Usability Standards Model provided an updated, integrated framework for assessing usability in terms of effectiveness, efficiency, and satisfaction dimensions, thus giving a helpful hand guiding system designs to effectively achieve users' goals.

In light of such significant conclusions from previous literature, it becomes clearly apparent that the systematic integration of these various usability theories, models and theoretical frameworks indeed constitutes a valuable, timely addition to the current study possibly contributing to enabling it to enrich ongoing, scholarly discussions and draw a wider-scale panoramic picture of *Safeer2* system's usability. As a consequence, the researcher would not limit himself to a single model only but would, rather, adopt a newly proposed, extracted, synthetic model to formulate a comprehensive, broad perspective of information systems usability focusing on covering the following eleven major factors/dimensions, i.e. effectiveness, system performance, ease of navigation, information quality, error tolerance, privacy, system customization, learnability, accessibility, support and communication, and overall satisfaction.

C-Usability Factors and Dimensions

Below is a detailed explanation of the major eleven factors/ dimensions of usability focused upon in the current study according to the newly proposed, synthetic model the researcher extracted from his comprehensive systematic literature review of various relevant theoretical and conceptual frameworks of usability (e.g. Nielsen, 1994; DeLone & McLean, 2003; Alshamari, 2016; Machado Faria et al., 2016; Tropea, 2018; An & Lee, 2022; Fu et al., 2024), namely:

1-Effectiveness: It's information system's effectiveness in achieving the desired goals sought by concerned users to achieve through its use, both effectively and accurately, e.g. obtaining financial and academic services.

2-System Performance: It relates to how the system is responsive and efficient in providing required services to users. Main indicators of good performance usually include speed of uploading and downloading data, system stability under pressure, and absence of frequent delays negatively affecting user experience. Optimal performance also requires service consistency across different time periods, thus ensuring users' ability to consistently rely on the system at different times.

3-Ease of Navigation: It expresses user's ability to navigate system pages smoothly and easily. Therefore, the user interface should be organized in a suitable way allowing quick access to required services, including clear menus, meaningful icons, and effective search features, thus helping users to complete their tasks quickly, without complexity. Information should also be organized to allow users to find it easily.

4-Information Quality: It's information system users' ability to obtain quality information from the system in terms of its accuracy,

timeliness, clarity, understandability, and comprehensiveness so as to help them make sound, correct decisions. It also includes providing sufficient information about users' various requirements and transactions, thus reducing the possibility of errors or ambiguities.

5-Error Tolerance: It's how the system corrects the errors that may occur during use easily. In other words, the system should provide users with clear instructions when an error occurs to make it easy for them to understand how to quickly resolve the problem in addition to appropriate notifications and applicable solutions.

6-Privacy: It relates to the security of users' personal information and data. Basically, the system must ensure that its users' data is strictly protected from unauthorized access along with providing secure mechanisms for logging/signing in and interacting with the system, including clear notifications of transactions and ensuring the security of provided information.

7-System Customization: It refers to users' ability to modify their information system user interface to suit their own needs and preferences. As a consequence, the system should supply multiple options to update personal information and change system preferences according to each individual user's needs and preferences, thus providing customized user experiences with a personalized character.

8-Learnability: It's the ease with which information system users learn how to use the system in carrying out their transactions and remember the procedures they follow in their accomplishment without the need for any extensive or in-depth training. Therefore, clear and helpful user manuals should be available to help users learn the steps needed to perform tasks.

9-*Accessibility*: It's the process of ensuring that all users, including the disabled and people with special needs, are able to access and use the system easily so that there are no restrictions or barriers imposed on system use.

10-Support and Communication: It's the system's ability to provide users with effective support channels, such as technical support and immediate assistance services. As a result, the user interface should include appropriate means of communication with the responsible parties and submit inquiries, thus facilitating quick and effective solution of users' potential problems.

11-Overall Satisfaction: It's users' general satisfaction with their total information system use experience and the extent to which they would recommend the system for others to repeatedly use in the future.

D-Evaluation of Information Systems Usability:

First, Mc-ornoc & Palaoag (2024) focused on evaluating the usability of the Human Resource Information System (HRIS) at Apayao State College in the Philippines from its users' perspective using a survey questionnaire prepared by the two researchers in light of a number of specific usability criteria. Results showed a high usability level of the information system under study that successfully contributed to reducing or solving such diverse problems of its traditional Human Resource Management (HRM) functions as recruitment and selection (staffing), personal data form management, attendance monitoring, employee performance appraisal, and leave of absence record management. Besides, users were also satisfied with the system's overall functionality due to its efficiency, usefulness, and usability.

Similarly, Suria (2024), in turn, aimed to assess financial information system usability employing two prominent validated usability questionnaires, namely: *System Usability Scale* (SUS) and *Usability Metric for User Experience-Lite* (UMUX-Lite). Practically speaking, this field study was empirically carried out on a users' sample selected from 41 different schools in Indonesia. Results found that participant users enjoyed good usability levels as measured by both applied evaluation questionnaires. However, UMUX-Lite scale results showed they had more significant, higher usability levels. Overall, the study results highlighted the effectiveness of the developed financial information system demonstrating its future potential to significantly improve the performance of financial management processes at schools and other similar educational institutions.

However, Lee et al (2023) adopted a different approach for evaluating the usability of a marine Geographic Information System (GIS) software. Using eye-tracking equipment with a selected cohort of South Korean users while performing some assigned tasks, they were divided into two groups: experts and novices. Results highlighted that the marine GIS software had an adequate level of usability, especially the experts who showed a greater ability to focus attention and understand its functions, thus indicating that the adopted design significantly helped them use the software efficiently and navigate its important functions easily. On the other hand, when participant users encountered delays or errors, novices were necessarily more confused, indicating that the software may require further guidance for new users. In addition, those novices also spent more time trying to understand delivered information, thus suggesting an urgent need for future promotion of usability either through improving design or providing more training and support.

In a similar vein, Costaner (2023) sought to carry out an indepth heuristic evaluation for the usability of the Web-based information system of the Institute of Research and Community Service (LPPM) at University of Lancang Kuning, Indonesia. The study used a mixed-methods research approach incorporating two entangled methodologies guiding its evaluation purposes: a descriptive approach with qualitative analysis for heuristic data collection from by a group of evaluators with considerable expertise in developing software interfaces, and the System Usability Scale (SUS) method applied to a selected sample of system users, employing quantitative analysis. The qualitative results of the study revealed the need for improving several aspects of the evaluated system's usability, namely: system information clarity, feedback processes, image utilization, color selection, grammar quality, and writing consistency. On the contrary, its quantitative results showed that most participant users demonstrated sufficient skills in terms of learnability, competence, memorability, error management, and overall satisfaction with their total experience in system usage.

Likewise, Ikhsanuddin et al (2022) focused on analyzing the usability of the higher education information systems (SIDIKTI) at Sjakhyakirti University, Indonesia, from the perspective of a random sample consisting of 344 of their respective users: lecturers, operators, and students alike. Data was collected using a validated questionnaire: the *Post-Study System Usability Questionnaire* (PSSUQ). Results showed that participant users were generally satisfied with SIDIKTI systems that were largely easy and convenient to use, thus enabling those users to become more productive, effective, and efficient in their usage. Besides, the results also found that SIDIKTI information and user interfaces were of high

quality for their users who benefited from them in completing required tasks.

Finally, Jeddi et al (2020) aimed to evaluate the usability of a comprehensive national health information system in Iran using a heuristic method based on Nielsen's *10 Usability Heuristics* (UH) model criteria used by five independent evaluators as a reference framework for assessing the selected system's user interface design. Results concluded that the system suffered from a low level of usability and many notable catastrophic problems, especially in such major usability aspects as recognition rather than recall, match between the system and the real world, help and documentation, and help users recognize, diagnose, and recover from errors.

Overall, these above-mentioned studies clearly highlight the wide variety of research methodologies, user samples, data collection tools, and usability factors/dimensions focused upon in evaluating information systems usability. As a consequence, we need to formulate a more comprehensive, broad perspective for evaluating information systems usability from their users' perspective and covering all possible aspects of user experiences, including system effectiveness, performance, overall satisfaction, learnability, customization, and technical support. This is indeed what the researcher attempted to accomplish in his current study fundamentally based on evaluating *Safeer2* system's usability in light of a newly proposed, extracted, synthetic model including eleven various major factors/dimensions of usability extracted from his systematic literature review.

E-Safeer2 System:

Safeer2 is a high-tech electronic system addressing all academic, administrative and financial needs of overseas Saudi scholarship students based on a complete database of all those students (Al-

Maashi, 2021). In other words, it's an integrated digital platform specifically designed to serve such students via facilitating their studies abroad through following the best practices and providing them with the best possible services (Althobaiti, 2023: 10).

Accordingly, *Safeer2* system can be essentially considered an information system designed to provide the various services needed by Saudi scholarship students and improve their educational experiences via supplying them with academic and financial support and effectively responding to fulfilling their educational and cultural requirements. Besides, it's also one of the major governmental digital portals closely associated to the digital transformation strategies strongly advocated by the "*Saudi Vision 2030*" (Najem et al., 2016; Althobaiti, 2023).

No wonder then that the recent past years increasingly witnessed conducting a number of previous studies focusing on evaluating *Safeer* system's usability in its three different consecutive versions so far. For example, Najem et al (2016) evaluated *Safeer* system using a descriptive-analytical methodology seeking to identify gaps and shortcomings in its services and propose possible solutions for them to further augment it with additional capabilities and improve its performance, effectiveness, security and privacy, and data and document integrity. Results found three main shortfalls of *Safeer* system: study plan or scheduling, lack of a server and integrated services for e-mail, and lack of an integrated and effective archiving system.

Before that, Albalawi (2014), in turn, focused on evaluating the usability of *Safeer* system's e-services workflow at the Saudi Arabian Cultural Mission (SACM) in the United States of America (USA) from its affiliated employees' perspective. Data was collected

using a survey questionnaire designed by the researcher. Besides, open-ended questions were used to obtain more details. Results showed that although Safeer system was an effective tool in serving the expatriate Saudi students dispersed on a far-flung country like the USA and accomplishing their daily tasks, it still needed more improvement and adjustment to accommodate those users' needs and requirements. An illustrative case in point is that the system's usability as a user-friendly, easy to use, and intuitive e-portal was estimated at a very low level as participants were frustrated with its slow speed and long downtime during work hours; the negative frustrations more exacerbated by the system's frequent failures and inability to keep pace with students' high expectations for its eservices workflow. Therefore, more changes and options are required to make Safeer system more effective and efficient in the future. In order to further improve and refine the system, the study eventually suggested conducting other similar studies investigating its usability form students' perspective.

In a similar vein, Alzomily (2013), likewise, conducted another descriptive-survey study to verify whether *Safeer* system has contributed to improving SACM's work and helping overseas Saudi scholarship students in the USA resolve their needs quickly. Using a self-administered survey to identify perceptions of a selected sample consisting of 131 Saudi scholarship students currently staying in Bowling Green, KY, results emphasized that *Safeer* system's use provides quality service delivery within SACM, which in turn positively benefits Saudi scholarship students from all over USA by making, responding and facilitating their requests faster. In other words, the system is successfully able to perform its function as the bridge between different concerned institutions and Saudi students studying in the US who require assistance in processing their various academic requirements. Besides, results also showed that participant

students found the *Safeer* software interface easy to use. As a consequence, the overall impact of *Safeer* system on SACM and enhancing its ability to serve the Saudi student community in the US was generally positive via making SACM's services more responsive, convenient, and accessible to students, providing a more current and technologically relevant option for users, and contributing to achieving the organization's goal of bridging culture, geography and technology. However, some students expressed usability concerns about the system's loading speed and security of their personal data.

Finally, Al-Zuabi & Al-Shaikhli (2012) focused on assessing Safeer system's quality based on a proposed heuristic evaluation model. The sample included seven experts responding to a validated survey questionnaire developed by the two researchers in light of the reviewed literature measuring eight various dimensions of quality: accessibility, effectiveness, reliability, design and visualization, eservices, security and privacy, performance, and usability. Results concluded that Safeer system's quality is fairly good by 75% although it still needs further improvement and development by 25%. More specifically, strengths included security and privacy, accessibility, usability, and design and visualization as the system supported options to change passwords upon users' request, detailed user guides, obvious titles and formats for downloadable files, clear and usable portal toolbars, and legible colors and font sizes. On the other hand, weaknesses included performance, e-services, reliability, and effectiveness as the system didn't support users with special needs as well as visual and auditory impairments, internal search engines, and efficient e-services delivery from the first time.

Overall, the previously mentioned studies reveal some interesting noteworthy aspects for concerned educational researchers. First,

there is a top-priority need for conducting enough, more recent studies to evaluate *Safeer2* system's usability due to its ongoing, continuous developments. Second, most of those previous studies relied on surveying the opinions of participant samples basically consisting of experts or employees, thus highlighting the need for evaluating *Safeer2* system's usability from a user-centered perspective. Besides, concluded results showed that despite the multitude of advantages enjoyed by *Safeer2* system, there are, by contrast, many concerns related to its usability needing further study and research in the foreseeable future. Furthermore, it's also clear that each of these previous studies was separately concerned with a specific set of usability factors/dimensions, thus necessitating conducting a more comprehensive, broad evaluation contributing to bridging this widening research gap precisely identified by the current study.

III-Research Methodological Procedures:

Research Methodology:

The current research is an evaluation study focusing on evaluating the usability of a certain information system, i.e. *Safeer2*, from a user-centered perspective according to the perceptions of its Saudi scholarship student users based on survey questionnaire survey results.

Research Population and Sample:

The study population included all Saudi scholarship students in the United Kingdom during the 2024 academic year from which a convenience sample was selected. In light of such methodology, the research tool was prepared and applied on the Web-based Google Forms platform so as to obtain the largest possible number of responses to the administered questionnaire by targeted students. Overall, the research sample eventually consisted of 231 Saudi scholarship students in the United Kingdom. The following table sheds further light on the selected sample distribution according to participant respondents' demographic variables: gender, current scholarship status, and *Safeer2* system's use duration.

| Variable | Subcategories | Number | % |
|-----------------|--------------------------------|--------|-------|
| Condon | Male | 126 | 54.5% |
| Genuer | Female | 105 | 45.5% |
| Current | Bachelor's | 21 | 9.1% |
| Sholarship | nolarship Master's | | 36.4% |
| Status | Doctorate | 126 | 54.5% |
| Safeer2 | Less than 2 Years | 84 | 36.4% |
| System's | System's Between 2 and 6 Years | | 27.3% |
| Use Duration | More than 6 Years | 84 | 36.4% |

 Table 1: Sample Distribution According to Tackled Research Variables

Data collection:

To collect data for conducting the current study, a research tool in the form of a proposed survey scale, i.e. the *Safeer2 System's Usability from the Perspective of Its Users' Questionnaire* (SSUPIUQ), was employed by the researcher. Notably, this tool was prepared based on the user-centered approach of usability.

In order to identify usability factors/dimensions to be focused upon in his current study, the researcher surveyed previous usability theories, models, and theoretical frameworks, particularly focusing on their various factors and dimensions (as previously detailed in the literature review section). As a result, the researcher extracted a newly proposed, synthetic model of usability covering the following eleven major factors/ dimensions, i.e. effectiveness, system performance, ease of navigation, information quality, error tolerance, privacy, system customization, learnability, accessibility, support and communication, and overall satisfaction.

To formulate the questionnaire items measuring those abovementioned factors/dimensions, some previous studies focusing on evaluating *Safeer2* system's usability and other similar information systems were reviewed (e.g. Al-Zuabi & Al-Shaikhli, 2012, 2013; Alzomily, 2013; Albalawi, 2014; Najem et al., 2016; Jeddi et al., 2020; An & Lee, 2022; Mahfudz et al., 2022; Firmansyah & Riskinanto, 2023).

In order to assess and verify the validity of this proposed tool, the face validity method was used via presenting its initial form to a selected group of peer-review experts in the field of Information Systems (IS) to judge its inclusion and coverage of all tackled factors/dimensions of *Safeer2* system's usability from its users' perspective, the extent to which each item belongs to its assigned factor/dimension, the accuracy of formulating those items exact wording, and the extent to which they separately focus on a single idea only in addition to deleting, adding or modifying any of the items. As a standardized rule, reaching a consensus of 80% of the total peer-review experts on any questionnaire item was considered an adequate indicator of its face validity. Besides, in light of those experts' opinions, some items were excluded and the exact wording of some others was modified.

From a psychometric perspective, Cronbach's Alpha (α) was used to assess and verify the reliability of the proposed tool. Overall, the reliability coefficients of the questionnaire items ranged between 0.704 and 0.889, i.e. a strong indication indeed that all items are reliable and suitable for use. Accordingly, no item was deleted due to not significantly affecting the statistical calculation of the previously determined reliability values.

Furthermore, the overall reliability coefficient of the proposed questionnaire was statistically estimated as 0.922 whereas the reliability coefficients of its sub-dimensions ranged between 0.749 and 0.874, i.e. another strong indication that the tool already enjoys a high reliability level. In other words, it's reliable for field application on participant students' sample.

specifically, it's against such More methodological procedures that in its final form, the applied questionnaire in the current study consisted of eleven major factors/dimensions for evaluating Safeer2 system's usability: Effectiveness (6 items), System Performance (8 items), Ease of Navigation (10 items), Information Quality (7 items), Error Tolerance (3 items), Privacy (4 items), System Customization (6 items), Learnability (4 items), Accessibility (5 items), Support and Communication (9 items), and Overall Satisfaction (3 items). Therefore, the questionnaire eventually included a total number of 65 items distributed over 11 various usability factors or dimensions where each item has multiple answering options and response alternatives designed according to the 5-point Likert scale format with an overall total score for the entire questionnaire ranging between (65-325) points.

IV-Research Results and Discussion:

A-Results for Safeer2 System's Usability:

The frequencies, percentages, mean scores, standard deviations and relative weights of the applied questionnaire items and dimensions were calculated. Then, the obtained results were arranged and interpreted according to the statistically calculated values and overall mean score of those respective items and dimensions. The following Table 2 shows the overall results for *Safeer2* system's usability level as a high-tech information system as perceived by its users in light of digital transformation strategies.

| the Perspective of Its Saudi Scholarship Student Users (N=231) | | | | | | | | | |
|--|-----------------|---------------|-----------------------|--------------------|--------------------|------|--|--|--|
| Sub-Dimensions | ltems Number | Mean Score | Standard Deviation | Relative Weight | Usability Level | Rank | | | |
| First Dimension: Effectiveness | 6 | 4.121 | 0.773 | 82.4% | High | 1 | | | |
| Second Dimension: System Performance | 8 | 3.295 | 0.879 | 65.9% | Moderate | 7 | | | |
| Third Dimension: Ease of Navigation | 10 | 3.136 | 0.826 | 62.7% | Moderate | 8 | | | |
| Fourth Dimension: Information Quality | 7 | 3.364 | 0.874 | 67.3% | Moderate | 5 | | | |
| Fifth Dimension: Error Tolerance | 3 | 3.091 | 0.855 | 61.8% | Moderate | 9 | | | |
| Sixth Dimension: Privacy | 4 | 4.023 | 0.876 | 80.5% | High | 2 | | | |
| Seventh Dimension: System Customization | 6 | 3.394 | 0.988 | 67.9% | Moderate | 4 | | | |
| Eighth Dimension: Learnability | 4 | 3.318 | 0.854 | 66.4% | Moderate | 6 | | | |
| Ninth Dimension: Accessibility | 5 | 2.964 | 0.786 | 59.3% | Moderate | 10 | | | |
| Tenth Dimension: Support and | 9 | 2.949 | 0.918 | 59.0% | Moderate | 11 | | | |
| Communication Eleventh Dimension: Overall Satisfaction | 3 | 3.515 | 0.966 | 70.3% | High | 3 | | | |
| Overall Mean Score of the Questionnaire Respondents | 65 | 3.379 | 0.875 | 67.6% | Mode | rate | | | |

Table 2: Overall Results for Safeer2 System's Usability Level from the Perspective of Its Saudi Scholarship Student Users (N=231)

It's clear from Table 2 that the overall mean score of the questionnaire respondents was 3.379, thus highlighting a "moderate" usability level for *Safeer2* system as a high-tech information system as perceived by its users in light of digital transformation strategies. It's also clear that all tackled usability factors/dimensions ranged between "moderate" and "high". In particular, the first dimension "effectiveness" came first as the highest ranked with a "high" level and a mean score of 4.121 while the tenth dimension "support and

communication" came eleventh as the last (lowest) ranked with a "moderate" level and a mean score of 2.949.

Finally, Appendix 1 shows the detailed descriptive results of *Safeer2* system's usability factors/dimensions from the perspective of its Saudi scholarship student users. It's against such backdrop that the most significant strengths, weaknesses, and areas of improvement for *Safeer2* system's usability related to its various subfactors/dimensions can be extracted as summarized in the following Table 3.

Table 3: Strengths, Weaknesses, and Areas of Improvement for Safeer2 SystemClassified According to Usability Dimensions from the Perspective of Its SaudiScholarship Student Users (N=231)

| No. | Dimension | Strengths | Areas of Improvement | Weaknesses |
|-----|-----------------------|--|--|---|
| 1 | Effectiveness | Enabling users to obtain approvals to study abroad. Enabling users to obtain such services related to obtaining visas, booking travel tickets, adding companions and asking for personal identification numbers. Enabling users to obtain financial services. Enabling users to obtain academic services. | Providing updated information on scholarship students' academic events and activities. The user interface design is effective in achieving desired goals, both quickly and efficiently. | - |
| | System Performance | It is easy to upload and download required files via the system. The system | System performance is consistent and stable throughout the different times of the day. Difficulty in | Instability in system performance due to its increasing pumber of |

| No. | Dimension | Strengths | Areas of Improvement | Weaknesses |
|-----|------------|-----------------------|---|------------|
| 2 | | delays or errors | Websites due to slow | users or |
| | | during use. | Internet connection. | amounting |
| | | - Hyperlinks are | - The user interface is | stress. |
| | | working properly. | responsive and smooth. | |
| | | | Consistency is noted in | |
| | | | the design of user | |
| | | | interfaces and the | |
| | | | organization of | |
| | | | icons and hyperlinks | |
| | | – The system | – Fasy navigation between | – Not |
| | | toolbar/menu is clear | Website main and sub- | supporting |
| | | and easy to use. | pages via icons and | the search |
| | | – The system includes | menusas well as easy | function |
| | | clear tabs that | access and return to | instead of |
| | | facilitate access to | them. | typing on |
| | | the required services | - Easy identification of the | the |
| 3 | | and transactions. | next step while | keyboard. |
| | | | multitasking. | |
| | | | – Ability to find searched- | |
| | | | for information on | |
| | | | system website. | |
| | | | - when modifying the | |
| | | | for overseas study | |
| | | | mission services, the | |
| | Ease of | | system prevents such | |
| | Navigation | | unnecessary matters as | |
| | | | modifying the number of | |
| | | | credit hours or adding | |
| | | | more subjects. | |
| | | | – When a submitted | |
| | | | application is rejected | |
| | | | by the supervisor, the | |
| | | | or upload additional | |
| | | | attachments from My | |
| | | | Requests list but, | |
| | | | instead, from the Inbox . | |
| | | | – When filing a new | |
| | | | application, the terms | |
| | | | and conditions | |
| | | | associated with its | |
| | | | consent documents | |

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| | | 1 | | 1 |
|-----|------------------------|--|--|---|
| No. | Dimension | Strengths | Areas of Improvement | Weaknesses |
| | | | sometimes fail to appear. Therefore, users must repeatedly log/sign out and in several times. – When requesting an appointment, the system asks that the applicant's ID number must be inserted even though it's already written and such step can never be skipped at all. | |
| 4 | Information Quality | Information effectively helps to carry out the required tasks. The s pecial requirements for performing transactions are explained early in advance before starting. Ability to timely respond to filled applications after examination. | Easy access to information. The information provided by the system is easy to understand. The information displayed on system user interfaces is clearly organized. | Not providing sufficient information regarding the current laws of foreign scholarship countries. |
| 5 | Error Tolerance | P ossibility of modifying the application after its submission in case of forgetting to file any attachments. | The error messages provided by the system clearly tell users how to solve problems. | Errors are difficult to correct and are dealt with slowly. |
| 6 | Privacy | Respect users' privacy as well as security of their data and information. Easy log in to the system. The system sends notifications to register log-ins and request services via the | - | - |

| No | Dimonsion | Steven oth a | Amon of Incomment | Washmassas |
|-----|---------------|---------------------------|---|--------------|
| NO. | Dimension | Strengths | Areas of Improvement | weaknesses |
| | | Internet, Short Message | | |
| | | Service (SMS) and E- | | |
| | | mail. | | |
| | | – The system takes into | | |
| | | account the security of | | |
| | | information sources | | |
| | | and files | | |
| | | – Users' personal data | – It's possible to choose a | – It is |
| | | and contact addresses | unified format for main | s ometimes |
| | | can be directly | and subheadings as well | difficult to |
| | | updated. | as all user interface | customize |
| | | – Users can change | contents. | the system |
| 7 | Stratore | academic disciplines, | | user |
| | System | educational institutions | | interface. |
| | Customization | or countries of study. | | |
| | | – Users' personal | | |
| | | settings on the system | | |
| | | can be easily changed. | | |
| | | - It's easy to browse and | | |
| | | on the system | | |
| | | - It's easy to learn how | - Clear user manuals and | |
| | | to use the system in | documentation are | |
| | | a short period of | available to help users | |
| 0 | | time. | understand and easily use | |
| 8 | | | the system. | |
| | T | | - Easy remembering of | |
| | Learnability | | the required steps to | |
| | | | perform tasks and | |
| | | | transactions via the | |
| | | | system. | |
| | | | - The u ser interface is | |
| | | | understand for new users | |
| | | | – Some governmental | _ |
| | | | bodies impose restrictions | |
| | | | on system use or access to | |
| | | | some of its services. | |
| | Accessibility | | The system is easy to | |
| | | | use by some categories of | |
| | | | ,people with special needs | |
| | | | such as the blind and low- | |
| | | | vision community. | |

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| No. | Dimension | Strengths | Areas of Improvement | Weaknesses |
|-----|------------------------------|--|---|---|
| 9 | | | The u ser interface supports assistive technologies, such as screen readers and keyboards for users with special needs. Provision of multiple options for highlighting content, such as enlarging texts, playing audio cues for commands, and adjusting the display methods of contrasting colors to ease reading. The system's non- adoption of electronic signature tools, thus | |
| | | | access. | |
| 10 | | Availability of human communication channels with concerned parties. | The system provides appropriate technical support to users enabling them to overcome the potential technical problems they may encounter. | - The system's l ack of communicat ion channels between its |
| | Support and Communication | | The system quickly responds to all kinds of inquiries, whether academic, financial, etc. The system is integrated with other relevant electronic administrative communication systems. The number of possible written words allowed in the inquiry service is not sufficient to explain the tackled problem. The system facilitates instant contact with overseas Saudi Arabian | users, such as chat rooms and discussion forums. |

| No. | Dimension | Strengths | Areas of Improvement | Weaknesses |
|-----|--------------|-------------------------|------------------------------|------------|
| | | | cultural bureaus | |
| | | | worldwide. | |
| | | | – There is a notable | |
| | | | weakness in training the | |
| | | | staff of overseas Saudi | |
| | | | Arabian cultural bureaus | |
| | | | on how to use the | |
| | | | system. | |
| | | | – There are adequate help | |
| | | | and support elements | |
| | | | integrated into the | |
| | | | system user interface. | |
| | | - Recommending other | - Feeling satisfied with the | - |
| | • • | fellow scholarship | various services and | |
| 11 | Overall | students to use the | transactions provided by | |
| | Satisfaction | system in carrying | the system. | |
| | | out their transactions. | - Feeling satisfied with the | |
| | | | system userinterface. | |

B-Results for Differences in Usability Perceptions According to Demographic Variables:

The following tables show the differences in participant Saudi scholarship students' perceptions regarding *Safeer2* system's usability according to their demographic variables: gender, current scholarship status, and *Safeer2* system's use duration.

| Questionnaire Dimensions | Gender | Number | Mean Score | Standard Deviation | Degrees of Freedom | <i>T-</i> Value | Significance Value | Statistical Significance | |
|---------------------------|--------|--------|---------------|-----------------------|--------------------------|--------------------|-----------------------|-----------------------------|-------------|
| First Dimension: | Male | 126 | 24.50 | 2.998 | 220 | 1 220 | 0.217 | Not | |
| Effectiveness | Female | 105 | 25.00 | 3.122 | 229 | 1.259 | 0.217 | Significant | |
| Second Dimension: System | Male | 126 | 25.167 | 2.419 | 210.04 | 7 602 | 0.00* | Cignificant | |
| Performance | Female | 105 | 27.80 | 2.726 | 210.04 | 210.04 | 7.092 | 0.00 | Significant |
| Third Dimension: Ease of | Male | 126 | 30.167 | 3.197 | 220 | 5 / 16 | 0 00* | Significant | |
| Navigation | Female | 105 | 32.80 | 4.187 | 229 | 5.410 | 0.00 | Significant | |
| Fourth Dimension: | Male | 126 | 22.167 | 3.035 | 205 40 | 6 880 | 0 00* | Significant | |
| Information Quality | Female | 105 | 25.20 | 3.561 | 203.40 | 0.889 | 0.00 | Significant | |
| Fifth Dimension: Error | Male | 126 | 9.333 | 1.252 | 105 25 | 0 650 | 0 5 1 1 | Not | |
| Tolerance | Female | 105 | 9.20 | 1.729 | 105.55 | 0.059 | 0.511 | Significant | |
| Sixth Dimonsion, Privacy | Male | 126 | 15.667 | 2.504 | 200 56 | 2 5 0 4 | 0.012* | Cignificant | |
| Sixth Dimension: Privacy | Female | 105 | 16.60 | 3.059 | 200.50 | 2.504 | 0.013 | Significant | |
| Seventh Dimension: System | Male | 126 | 19.833 | 4.237 | 220 00 | 2 2 5 1 | 0 0 2 0 * | Cignificant | |
| Customization | Female | 105 | 21.00 | 3.302 | 220.09 | 2.331 | 0.020 | Significant | |
| | Male | 126 | 12.833 | 3.035 | 167.29 | 3.293 | 0.001* | Significant | |

 Table 4: Distribution of T-Test Results for the Significant Differences between the Mean Scores of Participant Students' Responses

 Regarding Safeer2 System's Usability According to the Gender Variable (N=231)



| Questionnaire Dimensions | Gender | Number | Mean Score | Standard Deviation | Degrees of Freedom | <i>T</i> - Value | Significance Value | Statistical Significance |
|-----------------------------------|--------|--------|---------------|-----------------------|--------------------------|---------------------|-----------------------|-----------------------------|
| Eighth Dimension: Learnability | Female | 105 | 13.80 | 1.172 | | | | |
| Ninth Dimension: | Male | 126 | 13.667 | 1.980 | 220 | 10.252 | 0.00* | Significant |
| Accessibility | Female | 105 | 16.20 | 1.729 | 229 | 10.252 | 0.00 | Significant |
| Tenth Dimension: Support | Male | 126 | 28.00 | 2.592 | 100 % 8 264 0.00* | 199.86 8.264 | 0.00* | Significant |
| and Communication | Female | 105 | 24.80 | 3.185 | 199.00 | | 0.00* | Significant |
| Eleventh Dimension: Overall | Male | 126 | 10.667 | 1.893 | 165.04 | 0 772 | 0.441 | Not |
| Satisfaction | Female | 105 | 10.40 | 3.087 | 105.84 | 0.772 | 0.441 | Significant |
| Total Secure | Male | 126 | 212.00 | 22.111 | 220 | 2 072 | 372 0.00* | Significant |
| i otal Score | Female | 105 | 222.80 | 19,841 | 229 | 5.072 | | Significant |

* Significant at the 0.05 Level

First, results of Table 4 indicated that there were no significant differences between both males and females at "effectiveness", "error tolerance", and "overall satisfaction" dimensions. Notably, there were significant differences according to the gender variable in favor of females at several dimensions, including "system performance", "ease of navigation", "information quality", "privacy", "system customization", "learnability", and "accessibility" in addition to the questionnaire total score. However, significant differences in favor of males were found in only one dimension, i.e. "support and communication".

Table 5: Distribution of Kruskal–Wallis H-Test Results for the SignificantDifferences between the Mean Scores of Participant Students' ResponsesRegarding Safeer2 System's Usability According to the Current Scholarship StatusVariable (N=231)

| Questionnaire Dimensions | Current Scholarship Status | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance |
|-----------------------------|----------------------------------|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|
| First | Bachelor's | 21 | 161.21 | 2 | | | |
| Dimension: | Master's | 84 | 109.95 | 228 | 11.196 | 0.004* | Significant |
| Effectiveness | Doctorate | 126 | 112.50 | 230 | | | |
| Second | Bachelor's | 21 | 221.00 | 2 | | | |
| Dimension: | Master's | 84 | 126.50 | 228 | 72,762 | 0.00* | Significant |
| System Performance | Doctorate | 126 | 91.50 | 230 | 72,702 | 0.00 | eng |
| Third | Bachelor's | 21 | 221.00 | 2 | | | |
| Dimension: | Master's | 84 | 110.75 | 228 | 60.008 | 0.00* | Significant |
| Ease of Navigation | Doctorate | 126 | 102.00 | 230 | | | ••• |
| Fourth | Bachelor's | 21 | 221.00 | 2 | | | |
| Dimension: | Master's | 84 | 126.50 | 228 | 72 / 27 | 0.00* | Significant |
| Information Quality | Doctorate | 126 | 91.50 | 230 | /2.42/ | 0.00 | Significant |
| Fifth | Bachelor's | 21 | 21.50 | 2 | | | |
| Dimension: | Master's | 84 | 131.75 | 228 | 49.870 | 0.00* | Significant |
| Error Tolerance | Doctorate | 126 | 121.25 | 230 | | | |
| Sixth | Bachelor's | 21 | 197.00 | 2 | | | |
| Dimension: | Master's | 84 | 113.75 | 228 | 36.176 | 0.00* | Significant |
| Privacy | Doctorate | 126 | 104.00 | 230 | | | |

| Questionnaire Dimensions | Current Scholarship Status | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance | | |
|-----------------------------|----------------------------------|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|--------|-------------|
| Seventh | Bachelor's | 21 | 158.00 | 2 | | | | | |
| Dimension: | Master's | 84 | 118.63 | 228 | 10.721 | 0.005* | Significant | | |
| Customization | Doctorate | 126 | 107.25 | 230 | | | | | |
| Eighth | Bachelor's | 21 | 95.00 | 2 | | | | | |
| Dimension: | Master's | 84 | 131.75 | 228 | 8,539 | 8,539 | 8,539 | 0.014* | Significant |
| Learnability | Doctorate | 126 | 109.00 | 230 | | | | | |
| Ninth | Bachelor's | 21 | 84.50 | 2 | | | | | |
| Dimension: | Master's | 84 | 173.75 | 228 | 100,780 | 0,780 0.00* | Significant | | |
| Accessibility | Doctorate | 126 | 82.75 | 230 | | | | | |
| Tenth | Bachelor's | 21 | 128.00 | 2 | | | | | |
| Dimension: | Master's | 84 | 68.38 | 228 | 69,750 | 0.00* | Significant | | |
| Communication | Doctorate | 126 | 145.75 | 230 | | | | | |
| Eleventh | Bachelor's | 21 | 221.00 | 2 | | | | | |
| Dimension: | Master's | 84 | 76.63 | 228 | 85.804 | 0.00* | Significant | | |
| Satisfaction | Doctorate | 126 | 124.75 | 230 | | | | | |
| | Bachelor's | 21 | 221.00 | 2 | | | | | |
| Total Score | Master's | 84 | 110.75 | 228 | 58,339 | 0.00* | Significant | | |
| | Doctorate | 126 | 102.00 | 230 | | | | | |

* Significant at the 0.05 Level

In tandem, results of Table 5 revealed the presence of significant differences at the ($\alpha \leq 0.05$) level between the mean scores of participant students at all questionnaire dimensions as well as its total score according to the current scholarship status variable. As a consequence, in order to identify the source of significant differences between the mean scores of participant students' responses according to current scholarship status variable, the Mann–Whitney U-Test was used culminating into the results shown in the following table:

Table 6: Distribution of Mann–Whitney U-Test Results for Identifying the Source of
Significant Differences between the Mean Scores of Participant Students' ResponsesRegarding Safeer2 System's Usability According to the Current Scholarship Status Variable
(N=231)

| Questionnaire Dimensions | Current Scholarship Status | Number | TotalRanks | Average Rank | <i>U</i> - Value | Significance Value | Statistical Significance |
|-----------------------------|----------------------------------|--------|------------|-----------------|---------------------|-----------------------|-----------------------------|
| | Bachelor's | 21 | 1464.00 | 69.71 | 521.00 | 0.002* | Significant |
| Eirct | Master's | 84 | 4101.00 | 48.82 | 551.00 | 0.002 | Significant |
| Dimension: | Bachelor's | 21 | 2152.50 | 102.50 | 724 50 | 0.001* | Significant |
| Effectiveness | Doctorate | 126 | 8725.50 | 69.25 | 724.30 | 0.001 | Significant |
| Litectiveness | Master's | 84 | 8704.50 | 103.63 | 512/ 50 | 0.710 | Not |
| | Doctorate | 126 | 13450.50 | 106.75 | 5154.50 | 0.710 | Significant |
| | Bachelor's | 21 | 1995.00 | 95.00 | 0.00 | 0.00* | Significant |
| Second | Master's | 84 | 3570.00 | 42.50 | 0.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 2877.00 | 137.00 | 0.00 | 0.00* | Significant |
| System | Doctorate | 126 | 8001.00 | 63.50 | 0.00 | 0.00* | Significant |
| Performance | Master's | 84 | 10626.00 | 126.50 | 2528.00 | 0.00* | Significant |
| | Doctorate | 126 | 11529.00 | 91.50 | 5528.00 | 0.00 | Significant |
| | Bachelor's | 21 | 1995.00 | 95.00 | 0.00 | 0.00* | Significant |
| Third | Master's | 84 | 3570.00 | 42.50 | 0.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 2877.00 | 137.00 | 0.00 | 0.00* | Significant |
| Ease of | Doctorate | 126 | 8001.00 | 63.50 | 0.00 | 0.00* | Significant |
| Navigation | Master's | 84 | 9303.00 | 110.75 | 19E1 00 | 0.295 | Not |
| | Doctorate | 126 | 12852.00 | 102.00 | 4651.00 | | Significant |
| | Bachelor's | 21 | 1995.00 | 95.00 | 0.00 | 0.00* | Cignificant |
| Fourth | Master's | 84 | 3570.00 | 42.50 | 0.00 | 0.00 | Jiginnean |
| Dimension: | Bachelor's | 21 | 2877.00 | 137.00 | 0.00 | 0.00* | Significant |
| Information | Doctorate | 126 | 8001.00 | 63.50 | 0.00 | 0.00 | |
| Quality | Master's | 84 | 10626.00 | 126.50 | 2528.00 | 0.00* | Cignificant |
| | Doctorate | 126 | 11529.00 | 91.50 | 5526.00 | 0.00* | Significant |
| | Bachelor's | 21 | 231.00 | 11.00 | 0.00 | 0.00* | Significant |
| Cifth | Master's | 84 | 5334.00 | 63.50 | 0.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 451.50 | 21.50 | 220 50 | 0.00* | Significant |
| Error Tolerance | Doctorate | 126 | 10426.50 | 82.75 | 220.30 | 0.00 | Significant |
| | Master's | 84 | 9303.00 | 110.75 | 4851.00 | 0 202 | Not |
| | Doctorate | 126 | 12852.00 | 102.00 | 4651.00 | 0.292 | Significant |
| | Bachelor's | 21 | 1743.00 | 83.00 | 252.00 | 0.00* | Significant |
| Siyah | Master's | 84 | 3822.00 | 45.50 | 232.00 | 0.00 | Jiginneant |
| Dimension | Bachelor's | 21 | 2625.00 | 125.00 | 252.00 | 0.00* | Significant |
| Dimension. Drivacy | Doctorate | 126 | 8253.00 | 65.50 | 232.00 | 0.00 | Significant |
| Filvacy | Master's | 84 | 9303.00 | 110.75 | 4851.00 | 0 300 | Not |
| | Doctorate | 126 | 12852.00 | 102.00 | 4031.00 | 0.300 | Significant |

| Questionnaire Dimensions | Current Scholarship Status | Number | TotalRanks | Average Rank | <i>U</i> - Value | Significance Value | Statistical Significance |
|-----------------------------|----------------------------------|--------|------------|-----------------|---------------------|-----------------------|-----------------------------|
| | Bachelor's | 21 | 1554.00 | 74.00 | 441.00 | 0.00* | Significant |
| Seventh | Master's | 84 | 4011.00 | 47.75 | 441.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 1995.00 | 95.00 | 002.00 | 0.014* | Significant |
| System | Doctorate | 126 | 8883.00 | 70.50 | 882.00 | 0.014 | Significant |
| Customization | Master's | 84 | 9523.50 | 113.38 | 4620 50 | 0 1 2 2 | Not |
| | Doctorate | 126 | 12631.50 | 100.25 | 4630.50 | 0.122 | Significant |
| | Bachelor's | 21 | 672.00 | 32.00 | 441.00 | 0.00* | Significant |
| C - b + b | Master's | 84 | 4893.00 | 58.25 | 441.00 | 0.00 | Significant |
| Eignth | Bachelor's | 21 | 1554.00 | 74.00 | 1222.00 | 1.00 | Not |
| Dimension: | Doctorate | 126 | 9324.00 | 74.00 | 1323.00 | 1.00 | Significant |
| Learnability | Master's | 84 | 9744.00 | 116.00 | 4410.00 | 0.026* | Significant |
| | Doctorate | 126 | 12411.00 | 98.50 | 4410.00 | 0.050 | Significant |
| | Bachelor's | 21 | 231.00 | 11.00 | 0.00 | 0.00* | Significant |
| Nimeth | Master's | 84 | 5334.00 | 63.50 | 0.00 | 0.00 | Significant |
| Ninth | Bachelor's | 21 | 1774.50 | 84.50 | 1102 50 | 0.212 | Not |
| Accessibility | Doctorate | 126 | 9103.50 | 72.25 | 1102.50 | 0.215 | Significant |
| Accessionity | Master's | 84 | 12831.00 | 152.75 | 1222.00 | 0.00* | Significant |
| | Doctorate | 126 | 9324.00 | 74.00 | 1323.00 | 0.00 | Significant |
| | Bachelor's | 21 | 1554.00 | 74.00 | 441.00 | 0.00* | Significant |
| Tenth | Master's | 84 | 4011.00 | 47.75 | 441.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 1365.00 | 65.00 | 1124 00 | 0.283 | Not |
| Support and | Doctorate | 126 | 9513.00 | 75.50 | 1134.00 | 0.285 | Significant |
| Communication | Master's | 84 | 5302.50 | 63.13 | 1732 50 | 0.00* | Significant |
| | Doctorate | 126 | 16852.50 | 133.75 | 1752.50 | 0.00 | Significant |
| | Bachelor's | 21 | 1995.00 | 95.00 | 0.00 | 0.00* | Significant |
| Eleventh | Master's | 84 | 3570.00 | 42.50 | 0.00 | 0.00 | Significant |
| Dimension: | Bachelor's | 21 | 2877.00 | 137.00 | 0.00 | 0.00* | Significant |
| Overall | Doctorate | 126 | 8001.00 | 63.50 | 0.00 | 0.00 | Significant |
| Satisfaction | Master's | 84 | 6436.50 | 76.63 | 2866 50 | 0.00* | Significant |
| | Doctorate | 126 | 15718.50 | 124.75 | 2000.30 | 0.00 | Significant |
| | Bachelor's | 21 | 1995.00 | 95.00 | 0.00 | 0.00* | Significant |
| | Master's | 84 | 3570.00 | 42.50 | 0.00 | 0.00 | Jiginneant |
| T . 10 | Bachelor's | 21 | 2877.00 | 137.00 | 0.00 | 0.00* | Significant |
| lotal Score | Doctorate | 126 | 8001.00 | 63.50 | 0.00 | 0.00 | Significant |
| | Master's | 84 | 9303.00 | 110.75 | 4054.00 | 0.204 | Not |
| | Doctorate | 126 | 12852.00 | 102.00 | 4851.00 | 0.304 | Significant |

* Difference between the Mean Scores is Significant at the 0.05 Level

In other words, results of Table 6 clearly indicated that there were significant differences in Favor of Bachelor's students in the following dimensions: "effectiveness", "system performance", "ease of navigation", "information quality", "privacy", "system customization", "support and communication", and "overall satisfaction" in addition to the questionnaire total score. Similarly, compared to Doctorate students, their fellow Master's colleagues, in turn, enjoyed significant differences at some specific dimensions, i.e. "system performance", "learnability", and "accessibility".

 Table 7: Distribution of Kruskal–Wallis H-Test Results for the Significant Differences

 between the Mean Scores of Participant Students' Responses Regarding Safeer2

 System's Usability According to the Safeer2 System's Use Duration Variable (N=231)

| Questionnaire Dimensions | Safeer2 System's Use Duration | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance |
|--------------------------------------|--|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|
| | Less than 2 Years | 84 | 147.50 | 2 | | | |
| First Dimension: Effectiveness | Between 2 and 6 Years | 63 | 147.00 | 228 | 93.164 | 0.00* | Significant |
| | More than 6 Years | 84 | 61.25 | 230 | | | |
| Second | Less than 2 Years | 84 | 131.75 | 2 | | | |
| Dimension: System | Between 2 and 6 Years | 63 | 67.00 | 228 | 48,094 | 0.00* | Significant |
| renormance | More than 6 Years | 84 | 137.00 | 230 | | | |

| Questionnaire Dimensions | Safeer2 System's Use Duration | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance |
|--|--|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|
| Thind | Less than 2 Years | 84 | 134.38 | 2 | | | |
| Dimension: Ease of | Between 2 and 6 Years | 63 | 88.00 | 228 | 18.181 | 0.00* | Significant |
| Navigation | More than 6 Years | 84 | 118.63 | 230 | | | |
| Fourth | Less than 2 Years | 84 | 134.38 | 2 | 12.984 0.002* | | Significant |
| Fourth Dimension: Information Quality | Between 2 and 6 Years | 63 | 95.00 | 228 | | 0.002* | |
| | More than 6 Years | 84 | 113.38 | 230 | | | |
| | Less than 2 Years | 84 | 81.88 | 2 | | 44 0.00* | Significant |
| Fifth Dimension: Error Tolerance | Between 2 and 6 Years | 63 | 105.50 | 228 | 59.544 | | |
| | More than 6 Years | 84 | 158.00 | 230 | | | |
| | Less than 2 Years | 84 | 128.75 | 2 | | | |
| Sixth Dimension: Privacy | Between 2 and 6 Years | 63 | 123.50 | 228 | 10.542 | 0.005* | Significant |
| | More than 6 Years | 84 | 97.63 | 230 | | | |

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| Questionnaire Dimensions | <i>Safeer2</i> System's Use Duration | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance |
|--------------------------------------|---|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|
| Souchth | Less than 2 Years | 84 | 126.50 | 2 | | | 90 Not Significant |
| Dimension: System | Between 2 and 6 Years | 63 | 109.00 | 228 | 3.326 | 0.190 | |
| Customization | More than 6 Years | 84 | 110.75 | 230 | | | |
| | Less than 2 Years | 84 | 105.50 | 2 | | | |
| Eighth Dimension: Learnability | Between 2 and 6 Years | 63 | 77.50 | 228 | 54,820 | 0.00* | Significant |
| | More than 6 Years | 84 | 155.38 | 230 | | | |
| | Less than 2 Years | 84 | 155.38 | 2 | | | |
| Ninth Dimension: Accessibility | Between 2 and 6 Years | 63 | 102.00 | 228 | 48,667 | 0.00* | Significant |
| | More than 6 Years | 84 | 87.13 | 230 | | | |
| Tonth | Less than 2 Years | 84 | 87.13 | 2 | | | |
| Dimension: Support and | Between 2 and 6 Years | 63 | 109.50 | 228 | 38,498 | 0.00* | Significant |
| communication | More than 6 Years | 84 | 149.75 | 230 | | | |

| Questionnaire Dimensions | Safeer2 System's Use Duration | Repetition | Average Rank | Degrees of Freedom | Chi- Square (χ2) Value | Significance Value | Statistical Significance |
|-----------------------------|--|------------|-----------------|--------------------------|---------------------------------|-----------------------|-----------------------------|
| Floventh | Less than 2 Years | 84 | 113.38 | 2 | 0.267 | | |
| Dimension: Overall | Between 2 and 6 Years | 63 | 116.00 | 228 | | 0.267 0.87 | 0.875 |
| Satisfaction | More than 6 Years | 84 | 118.63 | 230 | | | |
| | Less than 2 Years | 84 | 137.00 | 2 | | | |
| Total Score | Between 2 and 6 Years | 63 | 102.00 | 228 | 13.235 | 0.001* | Significant |
| | More than 6 Years | 84 | 105.50 | 230 | | | |

* Significant at the 0.05 Level

Furthermore, results of Table 7 indicated the presence of significant differences at the ($\alpha \le 0.05$) level between the mean scores of participant students at most questionnaire dimensions as well as its total score according to the *Safeer2* system's use duration variable. As a consequence, in order to identify the source of significant differences between the mean scores of participant students' responses, the Mann–Whitney U-Test was again used culminating into the results shown in the following table:

Table 8: Distribution of Mann–Whitney U-Test Results for Identifying the Source
of Significant Differences between the Mean Scores of Participant Students'Responses Regarding Safeer2 System's Usability According to the Safeer2 System's
Use Duration Variable (N=231)

| Questionnaire Dimensions | <i>Safeer2</i> System's Use Duration | Number | Total Ranks | Average Rank | <i>U</i> - Value | Significance Value | Statistical Significance |
|---|--|--------|----------------|-----------------|---------------------|-----------------------|-----------------------------|
| | Less than 2 Years | 84 | 6027.00 | 71.75 | 2457. | 0.420 | Not |
| | Between 2 and 6 Years | 63 | 4851.00 | 77.00 | 00 | 0.420 | Significant |
| First Dimension: | Less than 2 Years | 84 | 9933.00 | 118.25 | 693.0 | 0.00* | Significant |
| Effectiveness | More than 6 Years | 84 | 4263.00 | 50.75 | 0 | 0.00 | Jighineant |
| | Between 2 and 6 Years | 63 | 6426.00 | 102.00 | 882.0 | 0.00* | Significant |
| | More than 6 Years | 84 | 4452.00 | 53.00 | 0 | 0.00 | Significant |
| Second Dimension: System Performance | Less than 2 Years | 84 | 7980.00 | 95.00 | 882.0 | 0.00* | Significant |
| | Between 2 and 6 Years | 63 | 2898.00 | 46.00 | 0 | 0.00 | Jighineant |
| | Less than 2 Years | 84 | 6657.00 | 79.25 | 3087. | 0 156 | Not Significant |
| | More than 6 Years | 84 | 7539.00 | 89.75 | 00 | 0.150 | Significant |
| | Between 2 and 6 Years | 63 | 3339.00 | 53.00 | 1323. | 0.00* | Significant |
| | More than 6 Years | 84 | 7539.00 | 89.75 | 00 | 0.00* | Jiginiteunt |
| | Less than 2 Years | 84 | 7098.00 | 84.50 | 1764. | 0.00* | Significant |
| | Between 2 and 6 Years | 63 | 3780.00 | 60.00 | 00 | 0.00 | Significant |
| Third Dimension: Ease of | Less than 2 Years | 84 | 7759.50 | 92.38 | 2866. | 0.032* | Significant |
| Navigation | More than 6 Years | 84 | 6436.50 | 76.63 | 50 | 0.032 | Significant |
| | Between 2 and 6 Years | 63 | 3780.00 | 60.00 | 1764. | 0.00* | Significant |
| | More than 6 Years | 84 | 7098.00 | 84.50 | 00 | 0.00* | Significant |
| Fourth Dimension: | Less than 2 Years | 84 | 7318.50 | 87.13 | 1543. | 0.00* | <i>c</i> |
| Information Quality | Between 2 and 6 Years | 63 | 3559.50 | 56.50 | 50 | 0.00 | Significant |

| Questionnaire Dimensions | Safeer2 System's Use Duration | Number | Total Ranks | Average Rank | <i>U</i> - Value | Significance Value | Statistical Significance |
|-----------------------------------|-------------------------------------|--------|----------------|-----------------|---------------------|-----------------------|-----------------------------|
| | Less than 2 Years | 84 | 7539.00 | 89.75 | 3087. | 0.456 | Not |
| | More than 6 Years | 84 | 6657.00 | 79.25 | 00 | 0.156 | Significant |
| | Between 2 and 6 Years | 63 | 4441.50 | 70.50 | 2425. | 0.375 | Not |
| | More than 6 Years | 84 | 6436.50 | 76.63 | 50 | | Significant |
| | Less than 2 Years | 84 | 5775.00 | 68.75 | 2205. | 0.076 | Not |
| | Between 2 and 6 Years | 63 | 5103.00 | 81.00 | 00 | 0.070 | Significant |
| Fifth Dimension: Error | Less than 2 Years | 84 | 4672.50 | 55.63 | 1102. | . 0.00* | Significant |
| Tolerance | More than 6 Years | 84 | 9523.50 | 113.38 | 50 | | Significant |
| | Between 2 and 6 Years | 63 | 3559.50 | 56.50 | 1543. | 0.00* | Significant |
| | More than 6 Years | 84 | 7318.50 | 87.13 | 50 | 0.00 | Significant |
| | Less than 2 Years | 84 | 6405.00 | 76.25 | 2457. | 0.436 | Not |
| | Between 2 and 6 Years | 63 | 4473.00 | 71.00 | 00 | 0.430 | Significant |
| Sixth Dimension: Privacy | Less than 2 Years | 84 | 7980.00 | 95.00 | 2646. | 0.005* | Significant |
| Sixth Dimension. I rivacy | More than 6 Years | 84 | 6216.00 | 74.00 | 00 | 0.005 | Jiginneant |
| | Between 2 and 6 Years | 63 | 5323.50 | 84.50 | 1984. | 0.008* | Significant |
| | More than 6 Years | 84 | 5554.50 | 66.13 | 50 | 0.000 | Significant |
| | Less than 2 Years | 84 | 7098.00 | 84.50 | 1764. | 0.00* | Significant |
| | Between 2 and 6 Years | 63 | 3780.00 | 60.00 | 00 | 0.00 | Significant |
| Eighth Dimension: | Less than 2 Years | 84 | 5334.00 | 63.50 | 1764. | 0.00* | Significant |
| Learnability | More than 6 Years | 84 | 8862.00 | 105.50 | 00 | 0.00 | Significant |
| | Between 2 and 6 Years | 63 | 3118.50 | 49.50 | 1102. | 0.00* | Significant |
| | More than 6 Years | 84 | 7759.50 | 92.38 | 50 | 0.00 | Jiginneant |
| Ninth Dimension: Accessibility | Less than 2 Years | 84 | 7539.00 | 89.75 | 1323. 00 | 0.00* | Significant |

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| | Safeer2 | | | | | _ | |
|--------------------------|--------------------------|--------|----------------|-----------------|-------------|-----------------------|-----------------------------|
| Questionnaire Dimensions | System's Use | Number | Total Ranks | Average Bank | U- Value | Significance Value | Statistical Significance |
| | Duration | | Ranks | Nank | value | value | Significance |
| | Between 2 and 6 Years | 63 | 3339.00 | 53.00 | | | |
| | Less than 2 Years | 84 | 9082.50 | 108.13 | 1543. | 0.00* | Significant |
| | More than 6 Years | 84 | 5113.50 | 60.88 | 50 | 0.00* | Significant |
| | Between 2 and 6 Years | 63 | 5103.00 | 81.00 | 2205. | 0.081 | Not |
| | More than 6 Years | 84 | 5775.00 | 68.75 | 00 | 0.081 | Significant |
| Tenth Dimension: Support | Less than 2 Years | 84 | 5743.50 | 68.38 | 2173. | 0.050 | Not |
| | Between 2 and 6 Years | 63 | 5134.50 | 81.50 | 50 | 0.059 | Significant |
| | Less than 2 Years | 84 | 5145.00 | 61.25 | 1575. | 0.00* | Significant |
| and Communication | More than 6 Years | 84 | 9051.00 | 107.75 | 00 | 0.00 | Significant |
| | Between 2 and 6 Years | 63 | 3780.00 | 60.00 | 1764. | 0.00* | Significant |
| | More than 6 Years | 84 | 7098.00 | 84.50 | 00 | 0.00* | Significant |
| | Less than 2 Years | 84 | 7098.00 | 84.50 | 1764. | 0.00* | Significant |
| | Between 2 and 6 Years | 63 | 3780.00 | 60.00 | 00 | 0.00 | Significant |
| Total Score | Less than 2 Years | 84 | 7980.00 | 95.00 | 2646. | 0.005* | Significant |
| | More than 6 Years | 84 | 6216.00 | 74.00 | 00 | 0.005 | Significant |
| | Between 2 and 6 Years | 63 | 4662.00 | 74.00 | 2646. | 1.00 | Not |
| | More than 6 Years | 84 | 6216.00 | 74.00 | 00 | 1.00 | Significant |

* Difference between the Mean Scores is Significant at the 0.05 Level

Thus, results of this Table 8 showed that there were significant differences in favor of the group of students using *Safeer2* system for "less than 2 years" at several dimensions, namely: "effectiveness", "ease of navigation", "accessibility", "information quality", and "learnability", thus indicating that new users often find the system

easier and more effective to use and may have fewer and/or less complex expectations than their more experienced peers. Comparing the other two remaining groups of students, significant differences were found in favor of the group of students using *Safeer2* system for a period "between 2 and 6 years" preferring some dimensions like "privacy" and "error tolerance", thus reflecting those users' increasing long-term experience over time positively enabling them to enjoy a deeper interaction and understanding of the system and its different uses. Similarly, the results also revealed significant differences in favor of the group of students using *Safeer2* system for "more than 6 years" at other dimensions like "error tolerance", "privacy", and "support and communication", thus, in turn, reflecting their developing skills in adapting to the system and using its more complex tools or, alternatively, their prudent awareness of available sources of support.

C-Results for Suggestions and Recommendations to Develop *Safeer2* System's Usability

In light of the above-mentioned results for evaluating *Safeer2* system's usability, the following suggestions and recommendations can be provided to overcome its identified potential weaknesses classified according to the various factors/dimensions that the current researcher focused upon in his evaluation of *Safeer2* system's usability level from the perspective of its Saudi scholarship student users in light of digital transformation strategies as shown in the following Table (9):

| , | Table 9: Suggestions and Recommendations to Develop |
|-----------------------|--|
| Sa | afeer2 System in Light of Its Usability Evaluation Results |
| Dimension | Suggestions and Recommendations for Further Development |
| | To address recurring delays and system errors via improving technical infrastructure and increasing server efficiency to reduce their frequency and enhance system stability. To enhance system stability during stress periods by |
| | implementing suitable solutions ensuring balanced resource |
| System | usage when user numbers increase. This can be done in |
| Performance | practice through adopting such advanced techniques as load balancing and performance monitoring to ensure rapid and timely response. |
| | • To accelerate user interface and adjust response speed to help improve user experience by adopting data compression tools and promoting the performance of used programming codes. |
| | • To facilitate navigation between Website main and sub-pages by adding advanced navigation tools and restructuring icons and menus in a way allowing easy access to various delivered services in less time and with less effort. |
| Face of | • To develop search feature to become more accurate and |
| Ease of Navigation | and services while reducing over-reliance on unnecessary repeated typing. |
| | • To add clear terms and conditions to be applied when submitting new applications, thus contributing to reducing the need for repeated log/sign out and in several times when problems arise and saving users' time and effort. |
| | • To improve information organization within the system by redesigning its user interfaces to ensure that delivered information is clear and accessible. Besides, clear instructions |
| Information | can be provided on now to obtain the required information. |
| Quanty | To improve information display methods, including developing more advanced user interfaces to make provided information easier to understand, especially focusing on designing interactive interfaces capable of engaging users. |

| Dimension | Suggestions and Recommendations for Further Development |
|-----------------|---|
| | To conduct a comprehensive study of the content of provided information about the current laws of foreign scholarship countries and update it periodically to ensure its sufficiency and suitability for fulfilling respective students' needs. To seek improving application feedback and response system via providing an effective feedback mechanism for tackling user inquiries to ensure that their needs are better met on the system via provide the system with the system of the system with the system with the system of the system with the system of the system. |
| Error Tolerance | To enhance error messaging system to be clearer and more directive by providing precise instructions on how to handle possible errors that may occur during use. To develop a suitable procedural mechanism allowing users to easily correct errors, e.g. providing an option to modify filled |
| Error Tolerance | applications after their submission so as to reduce the frustration feelings caused by the occurrence of simple errors. To provide more effective interactive tools to help users debug errors, such as activating instant help feature or live chat with technical support staff. |
| System | To improve user interface customization by providing users with more adequate options to modify both appearance and functionality to suit their personal needs, thus increasing their feeling of comfort during actual use in reality. To improve formatting and display options for users to make it |
| Customization | easier to customize delivered content according to their |
| | various preferences and needs. |
| | • To redesign the user interface to be clearer and simpler, particularly focusing on preparing innovative designs in tandem with new users' expectations and perceptions. |
| learnahility | • To continuously keep updating and improving the quality of provided documents in a way ensuring their inclusion of detailed explanations and a variety of practical examples. |
| Leamability | added. |
| | • To develop a Quick Reference Guide (QRG) for users that |

outlines a quick overview of information providing guidance on

| Dimension | Suggestions and Recommendations for Further Development |
|-------------------------|--|
| Accessibility | basic technical steps and repetitive processes, thus making it easier for them to remember essential tasks or procedures. To communicate with relevant governmental bodies to understand imposed restrictions and try to mitigate them, therefore allowing users to access the system more easily. To consider implementing an electronic signature system to facilitate operations and simplify access to different services. To enhance accessibility options, e.g. changing text sizes/fonts, adding color contrast options as well as providing additional support and accommodations for people with special needs. To create direct and effective communication channels between users and concerned parties/stakeholders, such as launching chat platforms or providing live technical support. |
| Support and | • To promote more effective in-service continuous training and |
| Communication | professional development programs targeting the staff of overseas Saudi Arabian cultural bureaus worldwide focusing on <i>Safeer2</i> system, including acquaintance of how to provide users with appropriate support services. |
| Overall Satisfaction | To conduct periodic surveys to evaluate user satisfaction levels and collect feedback so that such information can be best utilized to improve provided services. To review user interface design based on user feedback, particularly focusing on providing a smoother user experience. |

Discussion:

Overall, results of the current study clearly showed that users evaluate *Safeer2* system's usability at a "moderate" level as the overall mean score of the questionnaire respondents was 3.379. In other words, *Safeer2* system already provides a reasonable user experience that, nevertheless, requires further improvements to reach a higher level of usability. Based on the adopted classifications of those tackled different dimensions of usability, it's noticeable that there was a wide disparity in users' evaluation level of each

dimension, thus highlighting the system's various entangled strengths and weaknesses. Therefore, such results are in tandem with those concluded by a plethora of previous studies focusing on evaluating *Safeer2* system's usability (e.g. Al-Zuabi & Al-Shaikhli, 2012, Alzomily, 2013; Albalawi, 2014; Najem et al., 2016).

In particular, results revealed that "effectiveness" is the highest rated dimension of usability, thus indicating *Safeer2* system's ability to achieve its users' desired goals, both efficiently and effectively. Besides, such high rating also indicates that the system performs its basic function properly, which is indeed a pivotal perquisite for digital transformation. Next came the "privacy" dimension in second place, another positive indicator of *Safeer2* system's support for securing users' data. Again, that high rating is a good sign that *Safeer2* system largely adheres to modern security and privacy standards, thus enhancing users' confidence in sharing their data, especially in light of the fact that the system is primarily used in an academic environment strongly requiring the strict protection of its various personal and academic data.

Notably, the "overall satisfaction" dimension was calculated at 3.515, thus highlighting the fact that users were generally satisfied with *Safeer2* system. However, although participant users were relatively satisfied, improving some other dimensions of the system's usability (e.g. "support and communication" and "accessibility") could raise such satisfaction to further higher levels. As for "system customization", such dimension had a "moderate" level with a mean score of 3.394, thus indicating that *Safeer2* system may provide some possibilities for customization with a potential room for improvement to make it more flexible and help users customize its user interface and system features according to their personal preferences. Then, the "information quality" dimension had

a "moderate" level with a mean score of 3.364, indicating that the information provided by *Safeer2* system is of an acceptable quality but still needs further improvement. Indeed, information quality is so pivotal for users as it directly affects their various academic and administrative decisions.

Besides, both "learnability" and "system performance" dimensions had "moderate" levels with mean scores of 3.318 and 3.295 respectively, which may indicate the presence of some obstacles hindering learning Safeer2 system and promoting its technical efficiency, e.g. its stability and response speed during use. The "ease of navigation" dimension also had a "moderate" level with a mean score of 3.136, i.e. a modest evaluation indeed reflecting, in a way or another, the emergence of some undesirable challenges encountered by users on navigating Safeer2 system and its different components. Then, the "error tolerance" dimension had a "moderate" level with a mean score of 3.091, indicating that Safeer2 system provides limited potentials to handle the errors that users may encounter. Therefore, it's important for the system to include suitable features allowing users to correct or alert when making errors, thus enhancing usability and providing smoother user experiences. As for the "accessibility" dimension, it also had a "moderate" level with a mean score of 2.964, a clear indication, of course, that Safeer2 system needs more future improvements. Particularly focusing on enhancing its ability to satisfy its users' accessibility requirements. Finally, the "support and communication" dimension came in last place having a "moderate" level with a mean score of 2.949, thus indicating that the support services currently provided by Safeer2 system are limited and do never meet users' expectations in a satisfactory manner. As result, improving this dimension would certainly contribute to increasing

both user satisfaction and system reliability on the long run in future years.

In a nutshell, results of the current study generally indicated that *Safeer2* system is already moving in the right direction at several of its key dimensions, e.g. effectiveness and privacy. However, it still needs further improvements in a number of its other usability dimensions like performance, ease of navigation as well as support and communication in order to improve user experience for the better, especially taking into account the proposed suggestions and recommendations to enhance *Safeer2* system's usability.

Furthermore, the study results shed light on the significant differences in participant Saudi scholarship students' perceptions regarding Safeer2 system's usability according to their demographic variables. For example, females tend to evaluate the system positively in most dimensions, with the only notable exception of the "support and communication" dimension largely preferable by males more than their peer females, with no significant differences found in other dimensions such as "effectiveness", "error tolerance", and "overall satisfaction", thus showing participants' homogeneous opinions regarding such usability dimensions. Besides, the results also showed a clear superiority in favor of the group of students using Safeer2 system for "less than 2 years" compared to the other two remaining groups of students using it for longer periods of time: either "between 2 and 6 years" or for "more than 6 years". In other words, new users often show greater overall satisfaction. However, users for longer durations show strong preferences for certain usability dimensions requiring more complex interaction with Safeer2 system. As a general rule, new users seem to find the system easy to use and its user interface simple and intuitive while more experienced users, in turn, tend to pay more attention to other

usability dimensions more related to performance depth and quality of provided support services.

Conclusions:

Generally speaking, we can say that results of evaluating *Safeer2* system's usability from the perspective of Saudi scholarship students clearly highlighted a "moderate" usability level with notable strengths in effectiveness, privacy, and overall satisfaction. On the contrary, weaknesses and areas of improvement were especially found in error tolerance, accessibility as well as support and communication. Accordingly, we can consider *Safeer2* system an effective, relatively easy to use tool for its Saudi scholarship student users. However, the system still needs many further improvements to overcome a number of its potential weaknesses revealed by the current study.

In light of such findings, it's recommended to exert more efforts to develop Safeer2 system in the future via improving its user interface to make it clearer and easier to understand, especially for new users. In tandem, the quality of provided information should be further improved by enhancing its content related to the current laws and policies of foreign scholarship countries so as to make it easier for better understand their different to requirements. users Comprehensive and updated user manuals and documentation should also be provided to facilitate users' learning and remembering processes. In particular, providing intensive, continuous training and professional development programs for the staff of overseas Saudi Arabian cultural bureaus worldwide dealing with Safeer2 system is indeed a necessary indispensable step to ensure their ability to provide effective technical support for users. In addition, more focus should be given to improving support and communication channels,

e.g. activating chat services and launching discussion forums to enable users to obtain immediate assistance. Furthermore, it's also important to continuously seek to improve the system's accessibility features, such as facilitating its use by people with special needs.

Finally, further studies are proposed for the foreseeable future taking the results, suggestions and recommendations of the current study as a starting-point for conducting more additional studies that enhance our understanding of how to develop high-tech information systems, e.g. Safeer2 system, in light of digital transformation strategies according to the "Saudi Vision 2030" strategic roadmap and future directions including, for example but not limited to, evaluating Safeer2 system's usability utilizing many other methodological approaches and tools based on expert opinions and direct evaluation of its user interfaces; examining the impact of information quality on Safeer2 system users' satisfaction; analysing the effect of user support on enhancing the effective use of information systems (taking Safeer2 system, for example, as an in-depth case study); and finally investigating to what extent customizing digital interfaces affects users' interaction and efficiency in using information systems, either positively or negatively.

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