

University Services at Syrian Higher Education Institutions: A Post-conflict Study

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Abstract. The ongoing Syrian conflict has aggravated the already distressed Syrian university services. The hosting of internally displaced students at public universities put more pressures on university services, especially academic guidance and student counseling. This paper aims to explore students' perceptions of the quality of university services at Syrian Universities and investigate venues for deploying the university's digital infrastructure. The results of this paper indicate that the current reach and quality of university services are unsatisfactory, while it is slightly better at private universities. In addition, while both private and public universities have a huge potential for development in university services through the applications of ICT solutions and digital technologies, this will also be tied to the willingness of university managers and supporting staff to continuously improve their technological capabilities as well as to their financial resources.

Keywords: higher education, university services, digital infrastructure, service quality, service reach, internally displaced students.

1. Introduction

The Syrian conflict has had severe consequences on the Syrian higher education sector. Research quality, curricula development, and university-business cooperation are among the direct victims of this conflict (Dillabough et al., 2018; Sukkar, 2017), Salhani & Khnouf, 2017). However, The Syrian conflict has also affected the academic attainment, mental and psychological wellbeing of Syrian students, particularly the internally displaced. However, very little attention was given, if any, to status quo of Syrian university services, particularly academic counseling, psychological and social guidance.

The culture of offering university services is relatively new at Syrian universities and can be traced back to the establishment of private universities in 2005. The long dominance of public universities in the Syrian higher education system augmented by the social/ political goal of “a place for all” have resulted in a very large number of students admitted every year to higher education beyond the capacities of many universities. Such huge number of entries makes it impossible to offer high quality university services.

The recent and speedy advancements in digital technologies revitalize the role and potentials of university services worldwide. Blockchain provides a rich, secure, and transparent platform for sharing documents and data. This Internet of value can help to reinvent higher education in a way, the Internet of information alone could not (Kamışalić et al., 2019; Turkanović et al., 2018). Artificial Intelligence supports student counseling process through suggesting study routes and recommends fields of study. It also enables the process of big data and identifies at-risk students and consequently avoids drop-outs and improves students’ academic performance.

Improving university services in Syrian universities is not a luxurious process anymore. It turns out to be a pressing priority with more Syrian universities hosting internally displaced students. In addition, the UN Sustainable Development Goals (SDGs) has a strong emphasis on the importance of promoting quality, and access to, higher education, as outlined by goal 4 of quality education and goal 10 of reducing inequality. Reducing inequality implies increasing the number of young adults with access to higher education, eliminating gender disparities in education, and ensuring equal access to education for people in vulnerable situations (UN, 2015).

The goal of this study is to analyze the overall effectiveness of university services and to determine the overall role that ICT and other digital technologies can have in improving this aspect. In this research, university services are considered effective if: a) Students have recognized the availability of these university services. b) Students have realized the impact that these services have had on various aspects of their academic lives. Therefore, this paper tries to answer the following research questions,

RQ1: Is the current reach and quality of university services satisfactory?

RQ2: Is the current reach and quality of university services differ between public and private universities?

RQ3: What is the potential for ICT and other digital technologies in improving the quality of university services?

The contribution of this paper is twofold. First, little attention has been given to the quality of university services in Syrian higher education institutions and the research on this topic is rather scarce. Therefore, this paper raises the awareness on this important topic and provides new insights into possible solutions. Second, the Syrian war conditions enable us to investigate this topic in a unique environment where needs and expectations are high but resources are modest and limited.

Section 2 provides thorough analysis of the literature on the situation of Syrian universities, follows with a discussion of how digital technologies can help in improving university services. Section 3 explains the research methodology while section 4 presents the empirical results and section 5 concludes.

2. Literature Review

The structure of the higher education sector in Syria includes several private and public universities. According to the Syrian Central Bureau of Statistics (2019), higher education institutions (HEIs) are divided into seven public universities, one virtual public university, and 21 private higher institutes, most of which offer either undergraduate, postgraduate studies, or both. In addition to those 29 HEIs, the Ministry of Higher Education supervises 53 intermediate institutes. Also, there are further 126 institutes supervised by other ministries, all of which offer vocational learning programs. Except for the 21 private universities offering undergraduate studies and one private academy offering postgraduate studies, all the other higher education institutes are state-owned. According to the Syrian Central Bureau of Statistics, the bulk of Syrian university students attend public HEIs with 732,495, while only 41,560 students attend private HEIs in the academic year 2017/2018. The construction of Syrian HEI students is shown in Table 1 below.

Table 1: The Construction of Syrian HEI students as of 2017/2018, The Syrian Central Bureau of Statistics (2019)

Item	Number	Type
Public HEI students	633,263	Undergraduate
	29,847	Postgraduate
	29,191	Vocational learning
	40,194	Miscellaneous
Total Public HEI students	732,495	
Private HEI students	41,511	Undergraduate
	49	Postgraduate
Total Public HEI students	41,560	

Curricula development has stagnated severely during the Syrian crisis. Dillabough et al. (2018) argue that the curriculum adopted by Syrian Universities has remained the same since 2011, which is a negative sign for the quality of higher education. Sukkar (2017) have also found that the research outcome of Syrian institutions is supply rather than demand-oriented, with a shortage of finance to support research and motivate researchers, and insufficient human resources to support collaboration with the market. Salhani and Khnouf (2017) find that the research outcomes of Syrian research institutions do not significantly match the research requirements of most Syrian businesses.

The Syrian conflict causes waves of displacements internally and across the borders. The number of internally displaced persons in Syria is estimated to be 6.5 million IDPs (UNHCR, 2019). The number of university-aged students attending higher education is below par, with 17% of university-aged IDPs have attended university education, compared to a General Enrollment Rate (GER) of 20% before the Syrian crisis (El-Ghali et al., 2017). The Syrian population's financial situation after nine years of crisis is very severe, with 83% of the population living below the poverty line (UNHCR, 2019).

The Ministry of Higher Education and Scientific Research (MOHESR) offers special support services to Syrian IDPs, allowing them to attend the study programs in other relevant institutions in safe areas, lowering tuition fees and offering special examinations as an extra round of exams, and providing special student guidance like open days before registration. Syrian universities have been instructed by MOHESR to accept IDP students in the same majors they were studying and just requiring them to compensate for missing credits, if any. Damascus University, as the major public university in Syria, hosts the majority of IDPs from all conflict-affected areas in Syria during the crisis, especially from Idlib, Deir Azur and Raqqah (Milton, 2019).

Despite their extreme importance, not much attention is given to the reach and quality of university services and how these services can be improved. Dalati and

Al Hamwi (2016) document that Syrian universities have scored below average in service quality. In addition, Khalifa et al. (2018) and EACEA (2017) debate the availability of university services in Syrian universities.

Other countries in the region also suffer from loose university services. A report by "Madad Fund" published in 2018 and titled "The Educational Challenge: Identifying Barriers & Seizing Opportunities in Higher Education for Syrian Refugees in Jordan", admits the weakness of the role of academic guidance at most Jordanian universities. It attributes the limited integration of Syrian refugees in their designated Jordanian universities to the weakness of the role of academic guidance in most of these institutions, and that academic counseling is only available for 1st-year students. Also, EuroMesco policy brief No.92 (2019) on challenges faced by Syrian refugees in the Higher Education system of host countries listed issues of the lack of information about study programs, lack of orientation & information about scholarship opportunities, long, unclear & controversial procedure for getting equivalence or registering & lack of information on the job market as major informative challenges.

The evidence on the potentials of integrating innovative digital technologies in university services is encouraging. Alnoukari (2009) argues that business intelligence can be used to predict students GPAs with more than 70% accuracy and identify students that are likely to drop out. In addition, Hamed et al. (2017) have shown, using Syrian data of Arab International University (AIU), that using the data mining algorithm of "Support Vector Machine" predicts students' AGPA with 70% accuracy. They argued that this Artificial Intelligence tool would provide students with proper advice on course selection. They also illustrated that Business Intelligence can be used to evaluate the teaching process of any course & identify challenges by comparing rates of success over semesters that can reflect the academic level of lectures & students.

MoHESR supports the inclusion of innovative technologies in the Syrian higher education. Law number 27 (2019) related to the establishment of MoHESR states that the Ministry supports the modernization of management & operations of universities. Also, the National Policy for Science, Technology, and Innovation (STI) in the Syrian Arab Republic admits the need to support the technological basis of universities and train academic & administrative staff on using innovative tools (STI, 2017). Besides, it encourages the use of advanced tools & big data analysis tools to reach informative indicators in all aspects that could help in the decision-making process (STI, 2017).

The integration of digital technologies in university services at universities in Syrian refugees' host countries such as Lebanon, Iraq, Jordan, and Turkey varies. The higher education sector in the middle east in general is outdated and requires much development, which includes the integration of modern technologies to its application (Abdulazeez et al., 2020).

In Lebanon, for example, there is no strategic governmental direction for the adoption of ICTs (Hamzeh et al., 2019; Tarhini et al., 2018). However, several universities have launched individual initiatives to apply information technology innovation individually. Some of these universities applied international standards to determine the extent of technology integration, while others applied only what they considered as a pressing need (Hamzeh et al., 2019). It should be noted that the university general enrollment rate among Syrian refugees in Lebanon has been as low as 6% (El-Ghali et al., 2017).

The situation in Jordan does not differ much from Lebanon. Traditional teaching methods are still followed in the majority of Jordanian universities (Al-Ramahi and Odeh, 2020; Haider and Al-Salman, 2020), despite the fact that the government of Jordan is calling for ICT adoption across Jordanian universities (Al-Shboul et al., 2017). The Jordanian government have launched several programs to improve the use of digital technologies across Jordanian universities over the last two decades (Alkhawaja and Halim, 2019). The general enrollment rate for Syrian refugees in Jordan was equal to 8%, the highest among the four host countries of Syrian refugees (El-Ghali et al., 2017).

Over the last 20 years, not much has been developed in the Iraqi higher education sector. After years of civil unrest, destructive wars, and discontinued funds, many university buildings have been lost, and development plans have not been pursued largely. Abdelazeez et al. (2020) is confident though that the higher education sector in Iraq can catch up by deploying ICT integration policies and programs for the Iraqi Universities. Reports has shown only a limited number of Syrian students, around 250 students enrolled in the universities to the North of Iraq (El-Ghali et al., 2017).

The higher education sector in Turkey can be considered the most advanced compared to other countries in the region. However, just like in Lebanon and Jordan, the lack of a strategic direction towards the integration of digital technologies from the government has been recorded (Güllü et al., 2016). Turkish universities hosts around 14,000 Syrian university students, 5000 of which are receiving the Turkish governmental scholarship (Yavcan and El-Ghali, 2017). On the other hand, the general enrollment rate of Syrian refugee students in Turkish university programs report a low rate of 2% (El-Ghali et al., 2017). The challenges the Syrian students face to enroll in university programs in Turkey are related to financial barriers, academic and language barriers, career counselling shortages, and the lack of legal documentation for refugees who continued their education inside refugee camps (El-Ghali et al., 2017).

3. Methodology

To answer our research questions, an online questionnaire has been posted on the social groups of Syrian university students. The questionnaire was composed of

twelve items distributed to the following sections:

1. Personal and contact information, two items
2. Assessment of Existing University Services Quality, five items
3. The potential of digital technologies in improving university services, three items
4. The technological capabilities of universities to apply digital technologies, two items

In order to answer the questionnaire, participants had to respond to three items with a simple yes/ no answer, two items with specific information (personal and contact details), three items on a scale from (one) to (five), with (one) being disagreeing seriously, and (five) being totally agreed, and three items on a scale from (one) to (five), with (one) being very bad, and (five) being very good; on the remaining one item, participants had to choose from multiple options based on a situation that they have faced before.

The participants in the questionnaire comprise private and public university students. Participants were 318 university students from eight public universities and three private universities. In total, 118 students came from private universities, while the remaining 190 students came from public universities. The majority of the responses received were from the faculties of economics and business administration, with 65 respondents, followed by the faculty of law with 24 respondents, while other faculties have managed to get up to ten respondents. For the best comparison, the analysis was conducted first on all the respondents regardless of their institution's background. Then, analysis was conducted on private university students, and public university students each separately, in order to compare the current state in public vs. private Syrian universities.

In order to ensure that the results of the questionnaire sample apply to the total population of Syrian university students, a statistical approach has been applied. The generalizability of the research results was analyzed by calculating the confidence interval up to 95% accuracy for each item in sections b, c, and d. The confidence interval is a statistical indicator that shows the range around the mean that allows for 95% generalizability of the total population. In other words, the given range will be 95% similar to the total population of university students in Syrian universities.

4. Results

The online questionnaire comprises four different sections, as mentioned in the methodology. The answers to our research questions are in sections b) Assessment of Existing University Services Quality, five items, c) The potential for ICT technologies in improving university services, three items, d) The technological capabilities of universities to apply ICT technologies, two items.

4.1. Research Generalizability

In this section, we have analyzed the generalizability of the questionnaire answers. The results of this study are generalizable to 95% of the Syrian university students' opinions about university services in Syria. The confidence Interval with 0.05 Alpha (α) provides results that are comparable to the potential answers of 95% of the students. In Table 1 below, the abbreviation given to each of the items in sections b, c, and d is provided:

Table 2 below shows the interval to which the results of these analysis are generalizable including for each section item: the abbreviation, the type of question, the number of responses received, the mean, the variance, the confidence interval, and the lower and upper limit. The type of question is either Yes/No question or (1) to (5). Yes/No questions are calculated by quantifying No as (0) and Yes as (1). The mean is the average number that is at the center of all responses. The lower and upper limits are the generalizability limits of the sample for 95% of the population. In the case of the item B5 only, the results cannot be generalizable using the confidence interval. However, the results are to suggest further quantitative research on this area.

Table 2: Questionnaire Questions and Abbreviations

Item	Questionnaire Question
B1	Does the university provide academic advising services
B2	How do you evaluate the given academic advising services?
B3	Does the university provide psychological and social support services?
B4	How do you evaluate the given psychological and social support services?
B5	What are the biggest problems that you have faced?
C1	Can Artificial Intelligence be used in academic advising services to improve the quality of these services?
C2	Is it beneficial to use innovative technologies for university exchange services?
C3	Is it beneficial to use innovative technologies to follow up on group-work activities?
D1	How do you evaluate the technological skills of university staff working on academic advising and psychological and social support services?
D2	Is it important to establish a national center to approve university faculty members, and train them on using the most updated technologies and methodologies in teaching and education?

Table 3: Descriptive Statistics of Answers to Questionnaire Questions

Item	B1	B2	B3	B4	B5	C1	C2	C3	D1	D2
Type	Yes/No	1 to 5	Yes/No	1 to 5	NA	1 to 5	1 to 5	1 to 5	1 to 5	Yes/No
Mean	0.3	2.1	0.08	1.45	NA	3.9	4.1	4.3	2	0.93
Variance	0.2	1.3	0.07	0.8	NA	0.76	0.84	0.68	1.2	0.06
Confidence Interval	0.05	0.15	0.03	0.15	NA	0.1	0.1	0.09	0.13	0.03
Lower Limit	0.25	1.98	0.05	1.3	NA	3.78	4	4.2	1.9	0.91
Upper Limit	0.35	2.27	0.1	1.6	NA	3.98	4.2	4.4	2.1	0.96

4.2. Current State of University Services

Out of 318 participants in the questionnaire, 222 participants, or 69.8%, did not acknowledge the availability of academic support services (B1). The numbers are even higher when participants are asked about the availability of psychological and social support services (B2), as 292 participants or 91.8% did not acknowledge the availability of psychological support services. Not surprisingly, when asked directly about the quality of these services, the answers have shown a dominant trend towards lower values indicating the lower quality of these services. From a scale of 1 to 5, with one being very bad, and five being very good, academic advising services scored 2.22 on average for question (B2). On a very similar scale, the quality of psychological and social support programs (B4) scored only 1.45 out of 5. Figure 1 depicts student answers to questions B1 to B4.

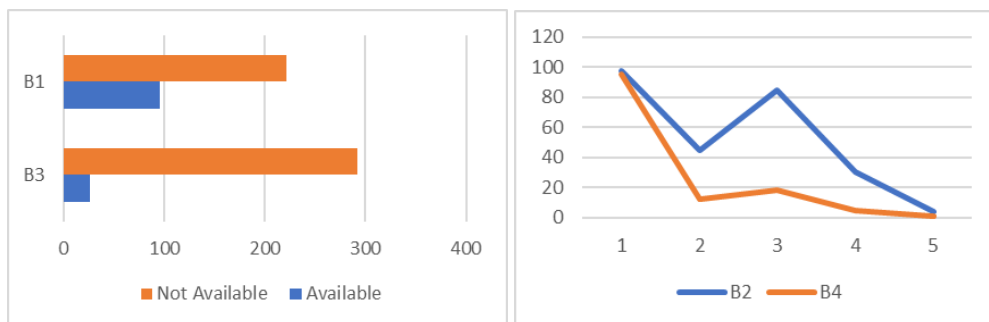


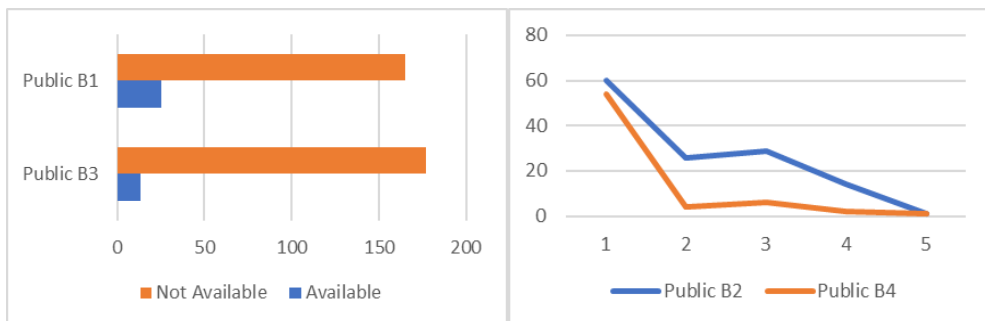
Fig. 1: Analysis of Answers of Questions B1 to B4.

Comparing Private Universities to Public Universities, it is noticeable to say that out of 118 participants from private universities, only 48 respondents or 40.7% did not acknowledge the availability of academic support services, which shows a big

difference in this aspect compared to public universities, for which the percentage scores a high 86.8%. Moreover, the quality of academic support services scored only 2.27 in private universities compared to 2 in public universities. While most private university students recognized the availability of academic advising services, there is no much difference between private and public university students in not recognizing the availability of social and psychological support services. While the percentage is 10% for private university students, it drops to 7% when it comes to public university students. The perceived quality drops from 1.5 for private university students to 1.38 for public university students. The remaining question (B5) in this section inquires on the quality of the academic services in terms of the number of the problems that students have faced. The two most commonly mentioned problems were the equivalence of academic degrees and the official confirmation of attained certificates. Figure 2 compares students answers to questions B1 to B4 between public and private universities.

4.3. The Potential for ICT Technologies in improving university services

While the results for the status quo of university services were not very promising, the same questionnaire has shown promising results for the potential ICT technologies may have in improving university services. 70% of university students agreed (or agreed completely) that utilizing artificial intelligence can have a positive impact on academic advising services (C1). As a result, this item scored 3.8 out of 5, with 5 reflecting the highest recommendation from the students. The results were even higher for utilizing emerging ICT technologies to exchange degrees and transcripts between universities (C2), with a majority of 80% of the students. The large majority of students, 87.5%, have recommended utilizing innovative ICT technologies to follow up on student group work (C3). Figure 3 depicts the trends in students answers to questions C1, C2 and C3.



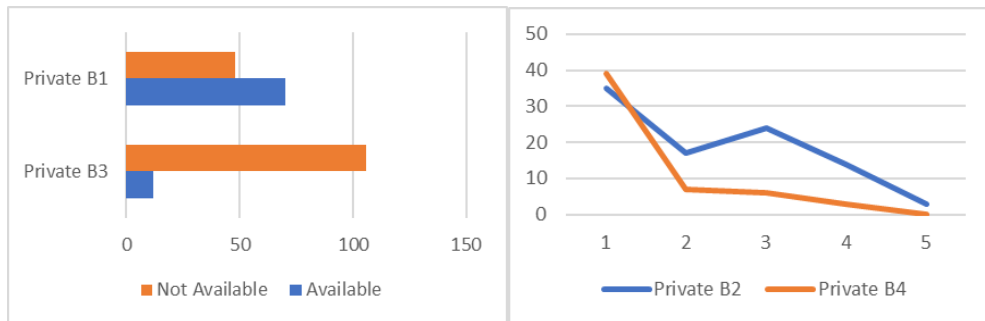


Fig. 2: Comparison Analysis of Answers of Questions B1 to B4: Public vs. Private HEIs.

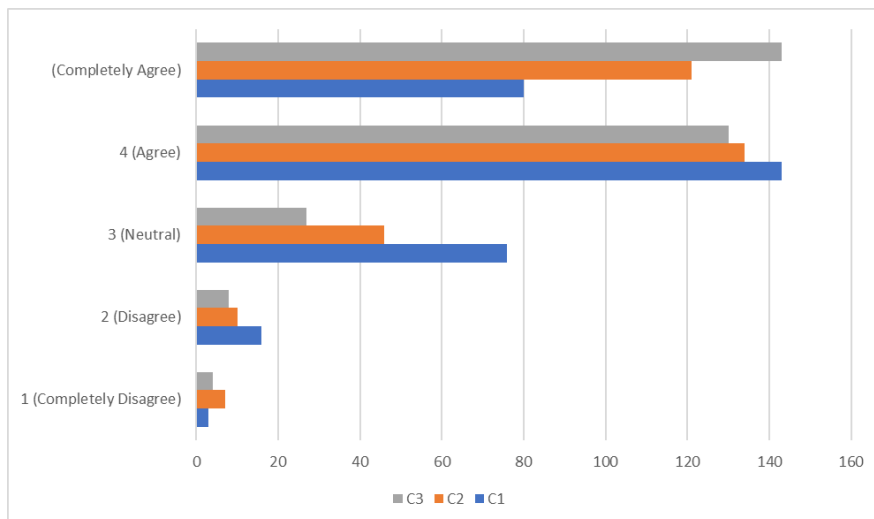


Fig. 3: Analysis of Answers of Questions C1 to C3.

4.4. The technological capabilities of universities to apply ICT technologies

The improvement in university services through the various applications of ICT and digital technologies is of great potential. However, this depends on the capabilities of the university staff and faculty, and whether they have the basic technical knowledge to facilitate the transfer to more modern technological applications. The results of the questionnaire show that the technological capabilities of the academic advising support staff are not adequate. The observation of university students has shown a score of 2.08 out of 5 in their technological capabilities for academic advising staff. However, the median in private and public universities was 2 and 1, respectively. The difference between public and private universities in this aspect was relatively clear, with public universities scoring 1.83 in technological capabilities of academic advising staff, and private universities scoring 2.28 instead.

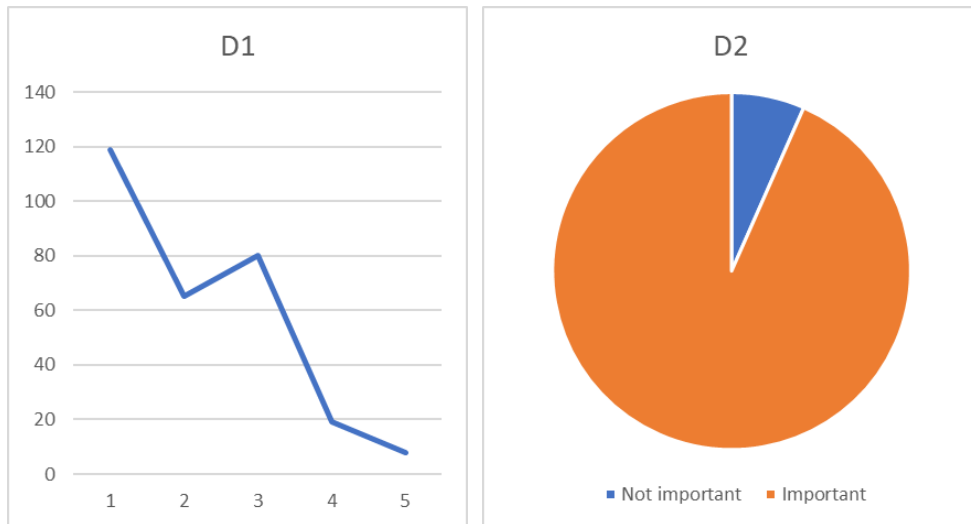


Fig. 4: Title

5. Conclusion

The current situation of university services in Syria is alarming, with no relevant student counseling & academic guidance services being systematically provided at public universities while private universities offer them only spontaneously. The integration of innovative technologies of artificial intelligence in Syrian universities could be the way to enhance university services offered not only to locals but also to Syrian IDPs (Mahmoud and Khalifa, 2015). Also, Syrian universities could benefit from advancements in ICT solutions, and particularly from blockchain applications, to sort the problems related to the recognition process of both mobility students and Syrian refugees. The integration of Artificial Intelligence (AI) tools in Syrian universities could pave the way to enhance university services offered not only to locals but also to Syrian IDPs.

The results indicate the importance of improving the quality and reach of university services to students. The section results prove that the currently provided university services are ineffective in solving students' issues at both public and private universities. Public and private universities are at different stands with regard to the availability of university services with clear superiority for public universities. However, the quality of university services are very modest at both universities. The results of Section B and C together prove that university services' effectiveness can be improved significantly by applying ICT and other digital technologies. However, the training and skills improvement of the academic advising staff is needed for the potential to be fully grasped.

In conclusion, the Syrian crisis has had severe impacts on Syrian universities. However, the very existence of most Syrian institutions and continued educational process is an achievement after nine years of the Syrian crisis. Syrian universities

had to cope with many risky and uncertain situations and had to facilitate a huge number of IDPs. In addition, the burden on the revenue and cost structures of Syrian universities was heavy.

Syrian HEIs need to improve their academic, social, and student counseling services to facilitate the pressing needs of IDPs. This will also help in achieving UN goal number 4 (Quality Education for all). Digital infrastructure and IT technologies can facilitate the delivery of these services to more people for lower costs. Advancements in ICT solutions represent opportunities for Syrian HEIs to improve their services and catch up with their international counterparts. Hence, additional efforts should be paid towards establishing the necessary IT infrastructure in addition to build the capacity of Syrian staff and students in using innovative ICT solutions.

This research has certain limitations. First of all, the Syrian war conditions have affected all aspects of life and the shift towards quantity rather than quality is expected in higher education in such conditions. Second, the distribution of participants in the survey is centered around social sciences. Students from other disciplines could have different needs and requirements. Therefore, a more balanced distribution of respondents could give further insights into specific needs and services and may constitute a venue for future research.

References

- Abdulazeez, D. H., Salah, R. M., and Alves, G. R. (2020). A Framework for Enhancing Higher Education in the Kurdistan Region of Iraq through A Dedicated Digital Education MOOC. *Journal of Duhok University*, 23(1), 81-93.
- Alkhawaja, M. I., and Abd Halim, M. S. B. (2019). Challenges of E-Learning System Adoption in Jordan Higher Education. *INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS AND SOCIAL SCIENCES*, 9(9).
- Al-Ramahi, N., and Odeh, M. (2020). The Impact of Innovative Technology on the Quality Assurance at Higher Education Institutions in Developing Countries: A Case Study of Jordan. *International Journal of Information and Education Technology*, 10(11).
- Al-Shboul, M., Al-Saideh, M., and Al-Labadi, N. (2017). Learners' perspectives of using ICT in higher education institutions in Jordan. *Instructional Technology*, 14(3), 27-86.
- Dalati, S., and Al Hamwi, S. E. (2016). Sustainable Development in Higher Education through Service Quality and Price Fairness: Empirical Evidence from

Private Universities in Syria. *Entrepreneurship and Sustainability Issues*, 4(1), 25-38.

Dillabough, J. A., Fimyar, O., McLaughlin, C., Al-Azmeh, Z., Abdullateef, S., and Abedtalas, M. (2018). Conflict, Insecurity and the Political Economies of Higher Education. *International Journal of Comparative Education and Development*.

EACEA. (2017). Overview of the Higher Education System Syria. *European Union*, 1–36.

El-Ghali, H. A., Ali, A., and Ghalayini, N. (2017). Higher education and Syrian refugee students: The case of Iraq.

Euromesco. (2019). Euromesco policy Brief n°92 – Challenges Faced by Syrian refugees in the higher education systems of host countries and how to overcome them: Lessons learned from Jordan.

Gü lü ,F., Kuusik, R., Shogenov, K., Laanpere, M., Oysal, Y., Sözcü, Ö. F., and Parlak, Z. (2016). An analysis and comparison of adoption of e-learning systems in higher education by lecturers at largest universities in Estonia and Turkey. *Baltic Journal of Modern Computing*, 4(3), 428.

Haider, A. S., and Al-Salman, S.(2020). COVID-19's impact on the higher education system in Jordan: advantages, challenges, and suggestions. *Humanities & Social Sciences Reviews*, 8(4):1418-1428

Hamed, M., Mahmoud, T., Gómez, J. M., and Kfour, G. (2017). Using Data Mining and Business Intelligence to Develop Decision Support Systems in Arabic Higher Education Institutions. *In Modernizing Academic Teaching and Research in Business and Economics*, 71-84.

Hamzeh, W., Mershad, K., and Vetohin, S. (2019). Integrating Technology into Higher Education: A Case Study in Lebanon.

Higher Commission for Scientific Research. (2020). National Policy for Science, Technology, and Innovation in the Syrian Arab Republic, Towards Knowledge Economy, Sustainable Development, and Reconstruction (Syria, Ministry of Higher Education and Scientific Research, Higher Commission for Scientific Research).

Joint Research Center. (2017). Blockchain in Education.

Kamišalić, A., Turkanović, M., Mrdović, S., and Heričko, M. (2019, April). A Preliminary Review of Blockchain-Based Solutions in Higher Education. *In International Workshop on Learning Technology for Education in Cloud*, 114-124.

Khalifa, B., Dukhan, O. and Mouselli, S. (2018), Master Degree Under Crisis: The Salient Motives of Business Students to Enrol in a Postgraduate Programme. *International Journal of Educational Management*, 32(4), 538-549.

Madad Fund. (2018). The Educational Challenge: Identifying Barriers and Seizing Opportunities in Higher Education for Syrian Refugees in Jordan. *Policy Recommendations and Future Strategies*.

Mahmoud, A. B., and Khalifa, B. (2015). A Confirmatory Factor Analysis for SERVPERF Instrument Based on a Sample of Students from Syrian Universities. *Education+ training*.

Milton, S. (2019). Syrian Higher Education During Conflict: Survival, Protection, and Regime Security. *International Journal of Educational Development*, 64, 38-47.

Salhani, A., & Khnouf, V. (2017). University-Business Research Collaboration in Syria: An Empirical Assessment and Suggested Conceptual Model. *In Modernizing Academic Teaching and Research in Business and Economics*, 165-180.

Sukkar, N. (2017). Forging Research Links Between Academia, Business and Industry in Syria and Lebanon. *In Modernizing Academic Teaching and Research in Business and Economics*, 181-186.

Syrian Central Bureau of Statistics. (2019). Statistical Group for the year 2019; Education (Syria, Ministers Council Presidency, Central Bureau of Statistics).

Tarhini, A., Tarhini, J., and Tarhini, A. (2019). Information technology adoption and implementation in higher education: Evidence from a case study in Lebanon. *The International Journal of Educational Management*, 33(7), 1466-1482.

Turkanović, M., Hölbl, M., Košič, K., Heričko, M., and Kamišalić, A. (2018). EduCTX: A Blockchain-Based Higher Education Credit Platform. *IEEE access*, 6, 5112-5127.

UNHCR. (2019, March 13). United Nations calls for sustained support to Syrians and the region ahead of Brussels conference. *Retrieved April 20, 2020*, from <https://www.unhcr.org/cy/2019/03/13/united-nations-calls-for-sustained-support-to-syrians-and-the-region-ahead-of-brussels-conference/>

UN. (2015, January). UN Sustainable Development Goals. *Retrieved April 2020*, from <https://sustainabledevelopment.un.org/?menu=1300>

Yavcan, B., and El-Ghali, H. A. (2017). Higher education and Syrian refugee students: The case of Turkey. *Policies, practices and perspectives, Beirut: Issam Fares Institute for Public Policy and International Affairs.*