USING THE SERVQUAL MODEL TO ASSESS SERVICE QUALITY OF INTERNET SERVICE PROVIDERS: EVIDENCE FROM JORDAN

Omar Salem[*]**, Marietta Kiss**
University of Debrecen, Faculty of Economics and Business, Institute of Marketing and Commerce, Debrecen, Hungary
salem.omar@econ.unideb.hu
kiss.marietta@econ.unideb.hu

Abstract: *The Internet service sector is characterized as extremely competitive, so Internet service providers have to seek to offer high-quality services to customers. This study aimed at measuring the gap between the expectations and perceptions of customers about the service quality of Internet service providers in Jordan. Data was gathered by surveying 405 customers of Internet service providers in Amman (Jordan) using the snowball sampling technique through social media. To reveal service quality, the questionnaire contained five dimensions of the original SERVQUAL model complemented by two additional dimensions by which gaps between customers' expectations and perceptions could be measured, then, the Expectation–Experience Analysis (EEA) has been used. The results show that there is a perceptual gap between customers' expectations and their actual experience of the Internet service delivered to them by Internet service providers in Jordan attributed to all seven factors of the service quality.*

Keywords: SERVQUAL, service quality, expectations, perceptions, Internet service providers, Jordan

JEL classification: M31

1. Introduction

Quality is arguably the most important and crucial aspect of any business strategy. It is a source of struggle for businesses, a source of desire for customers, and a source of renewal for markets. According to some researchers, the single most important determining factor in a company's long-term performance is service quality (Alter, 2010; Ali et al., 2018). Because the customer's perception of the company's services is so important, service quality has always been a deciding element for successful businesses (Hizam and Ahmed, 2019).

Parasuraman and others (1985, 1988) proposed five factors of service quality (reliability, responsiveness, assurance, tangibles, and empathy), which have since become widely utilized in measuring the quality of service in a variety of businesses in the form of the so called SERVQUAL model. Managers have attempted to use the SERVQUAL instrument in measuring consumer perceptions of service quality and finding the gap between the expected and perceived service quality using these five dimensions. Because it is based on customers' values and beliefs, which may vary from one individual to another and from one

[*] Coresponding author: Omar Salem
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culture to another, the relative importance of each dimension of the SERVQUAL model is subjective and relativistic (Furrer et al., 2000). The study of Harfoush and others (2018) suggested two additional service quality factors, which are specified to the telecommunication sector. These two factors are communication and network quality.

According to Statista (2021), the number of Internet users around the world is roughly 4.66 billion that indicates the Internet service is a fundamental component of meeting everyday needs and plays a critical part in human existence. Jordan's telecom and Internet sector is fiercely competitive and fast expanding. It is developing and expanding continuously, and it is still the most competitive telecom and Internet sector in the Middle East area (Alnsour et al., 2014). That is because the Jordanian government encourages the broadest possible access to affordable communications and Internet services. The Jordanian government is working to open up the telecommunications industry to competition, and the private sector is strongly encouraged to engage and invest in the development of this vital service sector (Alnsour et al., 2014). According to Obeidat (2022), eight internet service providers exist today. The primary supplier of the internet server is the national information center (NIC). It offers training sessions and workshops on how to use optical fibers and other methods. Numerous governmental institutions can access leased lines and ADSL thanks to it, and it delivers 5G service. Recently, 89% of people utilize the internet. The utilization of the 4G and 5G networks is responsible for this surge. It is considered to be a significantly greater increase when compared to other Arab countries.

The study has three main goals. Firstly, we assess customers' expectations about Internet service providers' service quality. Second, we examine their actual experience (perceptions) of service quality about Jordanian Internet service providers. The confirmation/disconfirmation approach is then used to determine whether there is a significant gap between customers' expectations and perceptions of the quality of Internet services provided to them. Then, the study aims at submitting recommendations to the Internet service providers depending on the results.

2. Literature review

Customers compare the service expected to what is really received after making a purchase, according to Lovelock and Wright (2007). They make decisions about how satisfied they are with service delivery and outcomes, and they form opinions about quality. From the standpoint of an organization, service quality, according to Futrell (2008), entails setting standards and specifications. If businesses want a delighted customer to keep using their services, they must give exceptional service quality.

SERVQUAL has been widely recognized and utilized in the domain of service quality measurement in several sectors since it was proposed by Parasuraman and others (1985, 1988). SERVQUAL was first developed in 1985, based on a series of research by Parasuraman and colleagues, who defined service quality as the difference between customer expectations and perceptions. The positive or negative gap views the level of customer satisfaction as a result of the difference between their expectations and the actual perceptions (Parasuraman et al., 1988). The gap is positive when the expectations fall short of perceptions, and it is negative when the perceptions are less than expectations. There are five factors that formulate the SERVQUAL model: tangibility, which is classified regarding the equipment, facilities, and material that have to give a positive image of the company, also, it includes the employees' appearance (Brink & Berndt, 2010); reliability, i.e., the ability to provide consistent and right service, some institutions have a proclivity to oversell their services, resulting in lofty promises that understate their true potential; responsiveness, which is the willingness to assist and respond to the demands of consumers; assurance, which focuses on employees' ability to instill confidence and trust in customers; and

empathy, which refers to the extent to which caring individualized service is given (Yeo, 2008).
These factors represent the 5 gaps in the SERVQUAL model proposed by Parasuraman and others (1985) as shown in Figure 1.

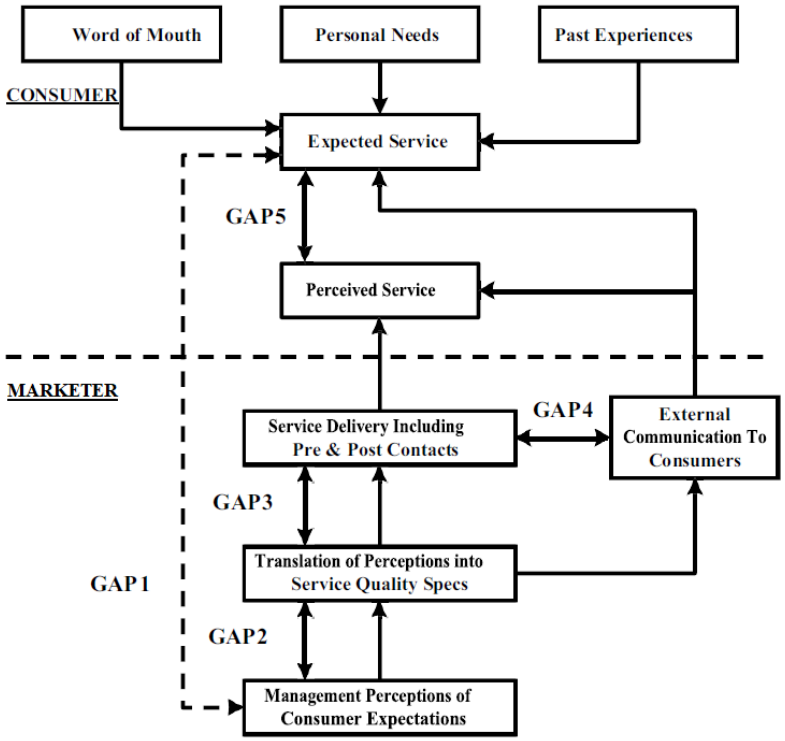

Figure 1: SERVQUAL gaps proposed by Parasuraman, A., Zeithaml, A. & Berry, L. (1985)

According to Parasuraman and others (1985), the first gap is caused by discrepancies in how a generating entity (service providers) views the demands of customers compared to what customers expect. Marketing analysis conducted by a specific business has an impact on the gap's size. The second discrepancy has to do with the inconsistency between the service's theoretical underpinnings and its real attributes. The management's dedication to service quality issues, goal-setting, task standardization, and opportunity perception all have a role in how large this difference will be. The next gap which is the third one is comprised of differences between the services rendered and the specifics pertaining to their construction. The degree to which this gap exists is determined by teamwork, as well as employee-to-task matching, technology, the perception of control, and the system for monitoring and controlling behavior. The discrepancy between service that was promised and actually provided is the fourth inconsistency. Horizontal communication and inflated promise tendencies both have an impact on the size of this disparity. The fifth and final gap—the discrepancy between the customer's expectations and what he/she actually receives—is an outcome of the previous gaps.
In their study, Harfoush and his colleagues (2018) proposed two additional service quality factors that are exclusive to the telecommunications industry. Communication focuses on the quality of communication between customers and company, and network quality, which is relevant to the quality of the Internet and compensation when the Internet service is interrupted.

In addition to the SERVQUAL model, the expectation–experience gap in Internet service providers in Jordan and Hungary can be found using the Importance–Performance Analysis (IPA) method introduced by Martilla and James (1977). Although straightforward, the IPA technique is an effective method for detecting problems with service quality that need strategic corrective steps (Chu & Choi, 2000). According to Deng (2008), the IPA technique measures the degree of service factors between importance and satisfaction in the process of service innovation. For managers' service quality improvement projects, Gemmel (2007) said that the IPA technique produces great service quality and high customer satisfaction. Leong (2008) evaluated the quality of airline service using the IPA method. The core premise of the IPA technique is that consumers' assessment of the actual services they received (performance) and their expectations of a service provider are the major factors in determining how satisfied they are with the service attributes. It necessitates documenting respondents' service encounter expectations as well as their actual service experience. When applying the (IPA) method using the SERVQUAL model, the formula of the analysis becomes the expectation–experience Analysis instead of the Importance–Performance Analysis. The Expectation–Experience Analysis (EEA) grid is depicted in Figure 2 and was adapted from Chu and Choi (2000).

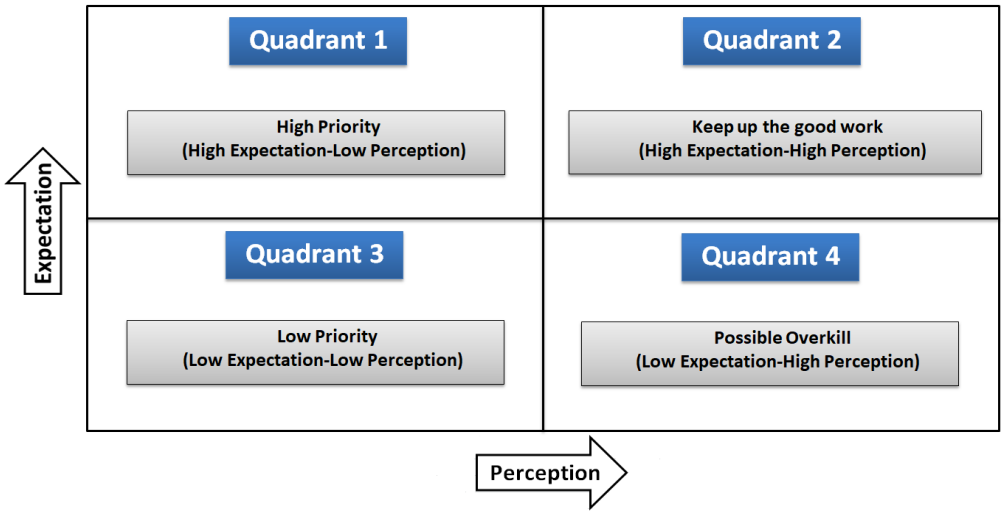

Figure 2: Expectations –Experience Analysis Grid adapted by Chu and Choi (2000, 365)

Depending on the explanation of Chu and Choi (2000) and Dsilva and others (2020), quadrant one "high priority" refers to that experience levels are not particularly high. This makes it clear that this is where the focus of any enhancement efforts should be. Quadrant two "keep up the good work" indicates to customers have high expectations, and the business also appears to perform at a high level in these tasks. Keep up the good work, is the message being sent here. In quadrant three "low priority", consumer attitudes and expectations are low. Managers should not be very concerned even though performance levels in this cell may be poor because the attribute in this cell is not thought to be very relevant. This low-priority cell should only receive a small number of resources. Regarding quadrant four "possible overkill", this cell has low-importance, but comparatively high-performance and properties. Although respondents are happy with the organization's performance, managers should question whether current efforts to improve this cell's characteristics are being overused.

3. Methodology

The primary goal of this study is to analyze the gaps between the expectations and perceptions of customers toward the service quality of Internet services in Jordan. Seven factors of the expanded SERVQUAL model (tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality) have been used to measure the differences between the expectations and perceptions. Then, the Expectation–Experience Analysis (EEA) grid has been used in order to segment the items and determine their positions in the grid and provide recommendations based on their positions.

A quantitative technique using a questionnaire as a research tool was employed to attain the current study's goals. Customers having Internet contracts with Internet service providers in Amman City, Jordan's capital, were the subjects of this study, which included a sample of 405 customers. The data was gathered through the use of a Google form questionnaire on social media platforms during the period of January and February 2022, using a snowball sampling technique.

The questionnaire was divided into two sections. The first one was based on Parasuraman and others' (1988) five-dimension SERVQUAL model expanded by two additional dimensions identified by Harfoush and his colleagues (2018). Customers' expectations and perceptions of Internet service providers were measured by 27 statements using seven-point Likert scales (see App. A). Then, in section two, respondents were asked to provide some personal information.

Table 1 shows the respondents' demographic characteristics, which includes gender, age, educational level, vocation, Internet service provider, and subscription period.

Table 1: Characteristics of the sample

Demographic profile	Frequency	Percentage
Gender		
Male	166	41%
Female	239	59%
Total	405	100%
Age		
18-25 years	42	10.4%
26-33 years	72	17.8%
34-40 years	145	35.8%
More than 40 years	146	36.0%
Total	405	100%
Educational level		
Secondary school and less	18	4.4%
Diploma[1]	43	10.6%
Bachelor	255	63%
Postgraduate[2]	89	22%
Total	405	100%
Vocation		
Private sector employee	201	49%
Without work	82	20.2%
Public sector employee	73	18%

[1] In middle east Arab countries, the diploma degree means studying two years before studying the bachelor degree, those who got low marks in secondary school study this degree.
[2] Master and PhD degree together.

Self-work	40	9.9%
Day laborer	9	2.2%
Total	405	100%
Internet service provider		
Orange	152	37.5%
Zain	133	32.8%
Umniah	80	19.8%
Almawared	10	2.5%
Mada	10	2.5%
AlMutakamila	8	2.0%
Damamax	7	1.7%
Etisalat	5	1.2%
Total	405	100%
Period of subscription		
Less than 1 year	35	8.6%
1-5 years	211	52.1%
More than 5 years	159	39.3%
Total	405	100%

4. Results

4.1 Reliability analysis

The degree to which scale-items are dependable in producing consistent outcomes is measured by reliability analysis (Kumar, 2002; Zikmund, 1997). We utilized Chronbach's Alpha test, which looks at how reliable a set of items is in measuring a single latent variable (Guilford, 1978). Results indicated that values are higher than 0.90 for the 'expectations' to all service quality factors (i.e., tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality). Regarding 'perceptions', the values are ranging from 0.80 to 0.96. Therefore, the test revealed that the scale-items used in this research were reliable (see Table 2).

4.2 Perceptions–Expectations Gap

In order to discover the gaps between customers' expectations and perceptions and whether the gap is positive or negative, we compared the mean scores of the 27 items applying an 'item-by-item' and 'factor-by-factor' analysis.

As illustrated in Table 2, the general result is that customers of Internet services are unsatisfied with the service they receive. The study hypotheses were tested using the paired-sample t-tests, and the results indicate that all the means of expectations are significantly higher than the means of perceptions ($p \leq 0.01$). The biggest gap is for item N2 by -1.1802, which means that the compensations provided by the company when the Internet service is interrupted is weak, while item T3 has the lowest gap of -0.1407, which indicates that the expectations of a decent and good appearance of employees are relatively well met. As for factors, all seven factors have negative differences between the customers' expectations and perceptions, ranging from -0.2784 for assurance to -0.9259 for network quality; all gaps are significant at $p \leq 0.001$. As a result, we can conclude that there are significant differences between customers' expectations and perceptions of the Internet service offered to them by Internet service providers in Jordan, thus we accept the alternate hypotheses for all factors (tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality).

Table 2: Mean scores of customers' expectations and perceptions, gap score, p-value, and Cronbach's Alpha (N=405)

Variable	Mean (perceived)	Mean (expected)	Gap score	p-value	Cronbach's Alpha
Tangibility	**4.7864**	**5.0877**	**-0.3013**	**<0.001**	**E: 0.959; P: 0.951**
T1	4.5333	5.1605	-0.6272	<0.001	
T2	4.9185	5.1136	-0.1951	<0.001	
T3	5.0247	5.1654	-0.1407	<0.001	
T4	4.6691	4.9111	-0.2420	<0.001	
Reliability	**4.5778**	**5.0291**	**-0.4513**	**<0.001**	**E: 0.972; P: 0.963**
R1	4.4741	5.1210	-0.6469	<0.001	
R2	4.6247	5.0296	-0.4049	<0.001	
R3	4.5975	5.0716	-0.4741	<0.001	
R4	4.5852	5.0617	-0.4765	<0.001	
R5	4.6074	4.8617	-0.2543	<0.001	
Responsiveness	**4.7099**	**5.0975**	**-0.3876**	**<0.001**	**E: 0.968; P: 0.967**
Rs1	4.6741	5.1432	-0.4691	<0.001	
Rs2	4.7185	5.0938	-0.3753	<0.001	
Rs3	4.7852	5.1062	-0.3210	<0.001	
Rs4	4.6617	5.0469	-0.3852	<0.001	
Assurance	**4.9043**	**5.1827**	**-0.2784**	**<0.001**	**E: 0.969; P: 0.950**
A1	4.9309	5.2370	-0.3061	<0.001	
A2	5.1235	5.2815	-0.1580	0.001	
A3	4.8840	5.1506	-0.2666	<0.001	
A4	4.6790	5.0617	-0.3827	<0.001	
Empathy	**4.7867**	**5.1269**	**-0.3402**	**<0.001**	**E: 0.972; P: 0.968**
E1	5.0864	5.2370	-0.1506	0.003	
E2	4.8049	5.1481	-0.3432	<0.001	
E3	4.7210	5.0617	-0.3407	<0.001	
E4	4.7284	5.1037	-0.3753	<0.001	
E5	4.5926	5.0840	-0.4914	<0.001	
Communication	**4.7984**	**5.1539**	**-0.3555**	**<0.001**	**E: 0.973; P: 0.935**
C1	4.9407	5.1605	-0.2198	<0.001	
C2	4.8000	5.1679	-0.3679	<0.001	
C3	4.6543	5.1333	-0.4790	<0.001	
Network quality	**4.1568**	**5.0827**	**-0.9259**	**<0.001**	**E: 0.924; P: 0.883**
N1	4.5210	5.1926	-0.6716	<0.001	
N2	3.7926	4.9728	-1.1802	<0.001	

Notes: E=expectations, P=perceptions.

Then, by transferring the expectation and experience results at the item level to the EEA grid, as illustrated in Figure 3, it was possible to identify service quality features at the item level that require adjustment. The Y-axis displays consumers' expectations for the service quality of Internet service providers, while the X-axis displays customers' experiences with Internet service providers. The four quadrants were constructed using the highest, lowest, and average mean scores for expectations and experience at the item level. Figure 3 represents the Expectations–Experience Analysis (EEA) grid.

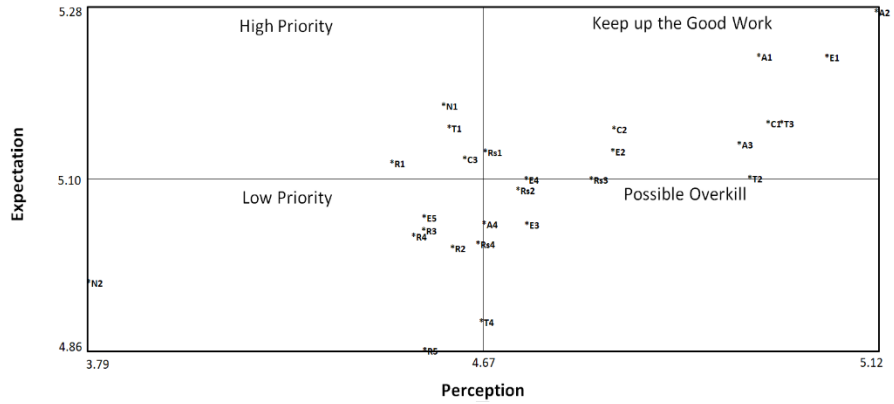

Figure 3: Expectations–Experience Analysis Grid of customers of Internet service providers
Notes: T-Tangibility; R-Reliability; A-Assurance; E-Empathy; RS-Responsiveness; C-Communication; N-Network quality; item codes can be found in App. A.

The first quadrant "high priority" has four items (N1, T1, C3, and R1), the expectations of customers related to these four items were high, but their perceptions are low, this result throws light on the necessity of improving the quality and speed of the internet service, developing the service providers' IT facilities, serious follow-ups on complaints submitted, and fulfilling the promises to customers. The second quadrant ("keep up the good work") includes twelve items (A2, E1, A1, T3, C1, A3, T2, C2, E2, Rs3, E4, Rs1), according to the analysis, these items work well, keeping the good work is efficient with the pursuit of maintaining the quality continuously. The third section ("low priority") has eight items (N2, R5, T4, Rs4, R2, R4, R3, and E5), customers' expectations were low toward the service quality, at the same time, their experience is also not high, only a limited amount of effort should be put into this cell because it is low priority. As for the fourth quadrant ("possible overkill"), it has only 3 items considered by customers to have low expectations and high experience (A4, E3, and Rs2), which indicates that consumers are satisfied with the performance of the Internet service providers.
As observed in Figure 3, half of items 14 of 27 are concentrated in the middle of the grid, this direction gives an indication of the ease of repositioning the items to the right or to above if the expectations or perceptions of customers increase, this leads to link this results to the nature of Internet sector where the competition between the providers is intense, in addition to the fact that customers change their opinions rapidly due to the growth and changes in this industry (Jhamb et al., 2020). Figure 4 illustrates the items located at the middle of grid.

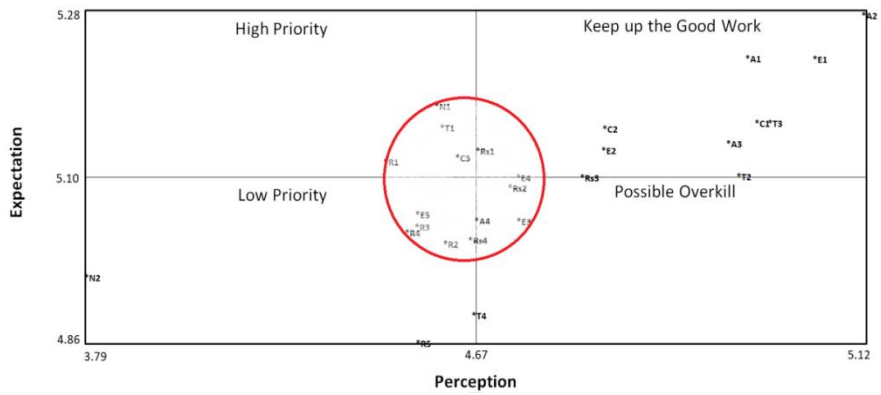

Figure 4: Items Located at The Middle of Grid

4.3 Discussion

As shown in the results of the study, all the seven factors of the expanded SERVQUAL model have negative gaps. Regarding the tangibility, the gap is -0.30, this result aligns with the previous study of Riaz and Sughra (2021), which notes that in their analysis that applied in the public hospital's sector in Rawalpindi in Pakistan, tangibility had the biggest gap. This result is supported by Rafati and others (2021) as well, which elaborates on students' opinions about the educational services quality in the southern region of Iran, the study findings explained the negative gap between the expectations and perceptions regarding the tangibility.

In terms of reliability, the findings give a gap value of -0.45, this outcome is consistent with the findings of Govender and others (2012) who sought to evaluate the expectations and perceptions of service quality among international students. According to the study's findings, there are discrepancies between what international students expect the five service quality criteria should be and what they actually experience, this result also agrees with all five factors' gap results.

With regard to responsiveness, the gap value equals -0.38, which is agreed with a study by Ngwenya (2017) that applied his study to the Telecommunication industry in South Africa. In the results, the gap between all factors was negative, responsiveness had the largest negative gap, this finding also conforms with the gap results for all five dimensions of the current study.

Concerning the assurance, outcomes gave a value of -0.27 for the assurance gap, this finding is similar to the results of the study by Ngwenya (2017) that applied on the Telecommunication industry in South Africa. Regarding empathy, the gap is -0.34 between the expectations and perceptions of customers toward the Internet service providers, the studies of Ngwenya (2017) and Harfoush and others (2018) also asserted the negative gap toward empathy.

As for the communication and network quality, they have also negative gaps (-0.35, -0.9259), they are with the same results line of Harfoush and others (2018) study. With concentrating on the results of the Expectations–Experience Analysis (EEA) grid, the findings harmonize with the results of Dsilva and others (2020) results applied in the Airlines industry in which the fourth quadrant has the lowest number of items similar to the current study, however, it differs where most of the reliability items in the current study localize in the third quadrant "low priority", while in terms of Dsilva and others (2020), most of the reliability items are localized in the first quadrant "high priority".

5.Conclusion

In this study, we adapted and assessed the SERVQUAL model in Jordan's Internet service sector. The study aimed at analysing the gaps between expectations and perceptions of customers toward the service quality of Internet service attributed to seven factors (i.e., tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality). In addition, the researchers used the Expectations–Experience Analysis grid (EEA) to evaluate in which quadrant the items are located giving an overall assessment of the service quality. The study was able to show that customers have negative quality perceptions of Internet services, as their expectations were not met by the performance of Internet services.

The results of the current study are extremely significant for the Internet service providers in Jordan where they can pinpoint exactly what sides must be improved to deliver high quality service to customers and to meet their expectations, especially this sector is highly competitive. Besides, the outcome also confirmed the necessity and importance of the

SERVQUAL model to assess the service quality of businesses in different sectors as many previous studies certified the same result. Furthermore, in order to fulfil the sustainability of the business, we recommend Internet service providers in Jordan pay more attention to the service quality, particularly network quality because it has the highest negative gap.
For future studies, one interesting area of research might be to apply the SERVQUAL model on students and other segments in the same country in the same sector in order to compare their evaluations. Also, international comparisons would be interesting.

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Bio-notes:

Marietta Kiss is an associate professor and head of the *Marketing Department at the Institute of Marketing and Commerce at the University of Debrecen*. Her scientific interests cover various marketing-related topics, including – among others – services marketing, higher education marketing, sustainable consumption, health-conscious consumer behavior, and nutrition marketing .
Omar Salem is a Ph.D. researcher in the marketing field in the *Doctoral School of Management and Business at the University of Debrecen, Hungary*. His scientific interests are marketing analytics, service quality, marketing of higher education institutions and service marketing.