Article

Quality Assessment of Administrative Units in Tourism Higher Education Using Continuous Scales

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Abstract: Higher education serves a pivotal role in enhancing citizens' quality of life and, therefore, must uphold high standards of quality. This study evaluated the quality of services provided by departmental administrative offices using the SERVQUAL instrument, which measures quality through the difference between perceived and expected service performance. Our primary aim was to investigate the marginal behavior of this assessment by capturing the underestimated and overestimated perceptions and expectations. To achieve this, we introduced a modified version of SERVQUAL, replacing traditional Likert scales with continuous scales. This enabled a detailed mapping of the area between underestimation and overestimation, enhancing the instrument's ability to yield more comprehensive insights. The study focused on the secretariat of the Department of Tourism Management, at the University of Patras, Greece, with second- and third-year students as assessors. Data analysis utilized the endpoints of these continuums. The results revealed that perceived service performance consistently and significantly fell below expectations, with reliability identified as the most important dimension. Furthermore, perception was found to be relatively objective, whereas expectation exhibited greater subjectivity. The findings demonstrate that this approach not only enhances service quality assessment but also provides a new perspective for evaluating tourism services, as a novel research tool.

Keywords: SERVQUAL; administrative units' assessment; quality evaluation; service evaluation; administrative performance evaluation; tourism higher education; continuous scales; underestimation and overestimation

1. Introduction

Academia stands at the crossroads of teaching and research, traditionally regarded as its two main missions (Bortagaray, 2009). Furthermore, universities bear a moral obligation to advance science and society by facilitating effective communication and fostering social engagement among their students (Etzkowitz, 2003; Rothaermel et al., 2007; Di Berardino & Corsi, 2018). Consequently, universities are expected to undertake a vast range of activities, including promoting innovation and knowledge transfer, lifelong learning and continuing education, and contributing to social and cultural development (Mora et al., 2015). At the same time, they must address these challenges while demonstrating accountability and an efficient use of public resources, a goal achievable only through meticulous strategic management (Callagher et al., 2015; Benneworth et al., 2016; Aragonés-Beltrán et al., 2017; De La Torre et al., 2017; Mariani et al., 2018). Thus, universities serve a central role in cultivating desirable attributes (Hirst & Peters, 1972), underscoring the necessity for them to be institutions of high quality.

Quality, however, is a complex and contentious concept to define, comparable to other abstract notions such as "equality" or "justice" (Harvey & Green, 1993). Gibson emphasizes this by stating that delivering quality is just as difficult as it is to describe it (Gibson, 1986). There is a wide range of different conceptualizations of quality being used (Schuller, 1991) as its interpretation depends on the user and the specific context in which it is applied (Harvey & Green, 1993). In the context of higher education, there are several stakeholders involved, including students, teachers, administrative stuff, government entities, and funding organizations (Burrows & Harvey, 1992), where each of them has its own perspective and approach regarding quality, shaped by its distinct objectives (Fuller, 1986; Hughes, 1988). Even though there is no consensus among the various definitions, there is notable agreement on certain aspects (Ball, 2008). These aspects of education quality include the inputs (e.g., students) and outputs (e.g., educational outcomes) of the education system, as well as its capability to satisfy needs and demands by meeting expectations (Cheng, 1995). Crosby (1979) succinctly defines quality as "conformance to requirements". It is worth noting that Coxe's research (Coxe, 1990) led to a positive correlation between citizens' standards of living and education and their demand on the quality of products and services provided. In order to meet stakeholders' expectations—considered the primary purpose of any product or service (Feigenbaum, 1991; Ismail et al., 2009)—there is a need for constant feedback (Nur-E-Alam Siddique et al., 2013), making assessment essential. In the context of education, Bramley defines assessment as a process that aims to determine the value of a certain aspect of education, or education as a whole, to facilitate decision-making (Bramley, 2003). This is achieved through a set of indicators designed to measure these values (Diamond & Adam, 2000), which are then compared with predetermined objectives (Noyé & Piveteau, 2018). Assessment can also be described as a process that captures the overall impression of an educational institution for the purpose of fostering improvement (Vlasceanu et al., 2004). Therefore, assessment is widely regarded as the most effective mechanism to enact change within an educational institution, enabling its development and contributing to its success (Darling-Hammond, 1994).

2. Literature Review

The absence of proper instruments to measure quality hinders the effort to improve it (Farrell et al., 1991). Moreover, accurate quality measurements are required in order to assess a service change, via a before and after comparison (Brysland & Curry, 2001). In the pursuit of assessing service quality, Gronroos (1982) developed a model based on the notion that consumers evaluate quality by comparing the service they expected with their perception of the service received. This line of thinking was followed by many researchers. For instance, Smith and Houston (1983) argued that consumer satisfaction depends on whether their expectations are met, while Lewis and Booms (1983) defined service quality as the extent to which the delivered service aligns with customer expectations. Recognizing that quality encompasses more than outcomes, researchers have explored appropriate dimensions of quality (Parasuraman et al., 1985). For example, Sasser et al. (1978) proposed three dimensions of service performance: personnel, facilities, and levels of material. To enable their search for these dimensions, Parasuraman et al. (1988) investigated and proposed a framework that deconstructs the gap between expectation and perception into five distinct gaps (Figure 1). The first gap arises from the difference between customer expectations and management's perceptions of those expectations. The second occurs between management's perceptions of customer expectations and the service quality specifications set by the firm. The third reflects discrepancies between the specified quality standards and the service actually delivered. The fourth emerges between the actual service delivery and how said service is communicated to consumers. Finally, the fifth gap is created between

the actual service delivery, combined with how it is communicated, and the customers' perception of said service, closing the loop between expectation and perception (Parasuraman et al., 1985).
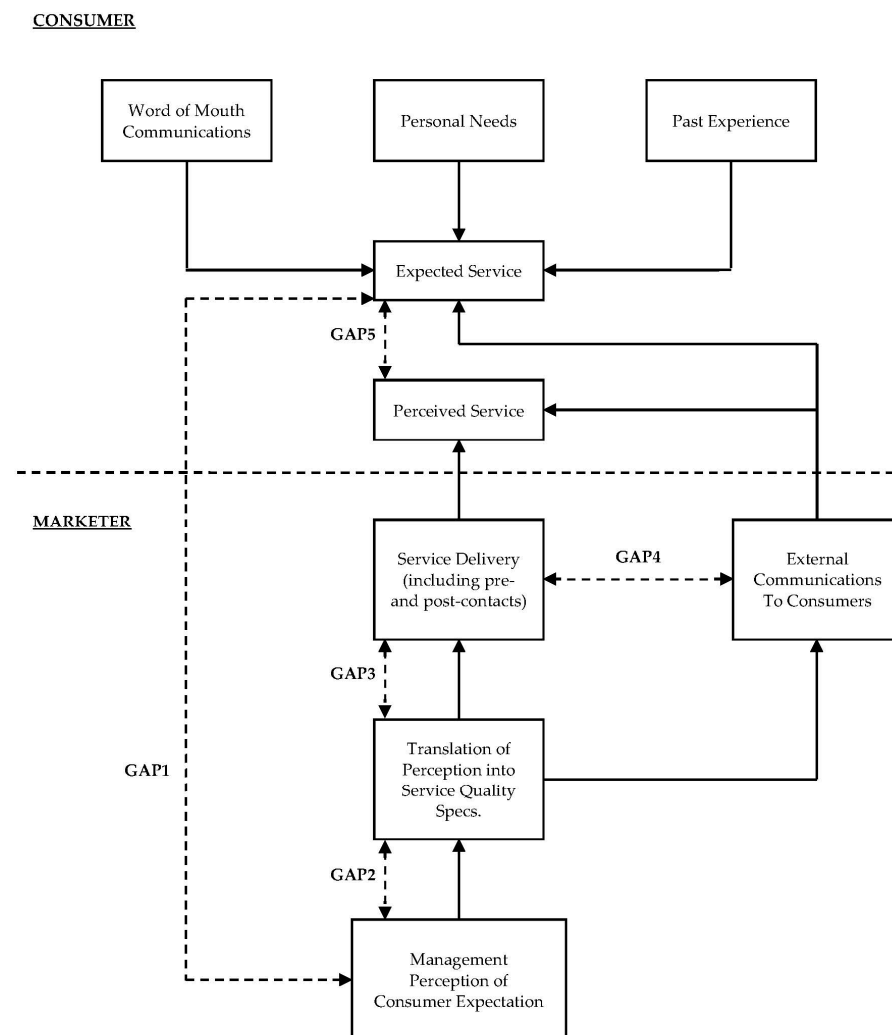
CONSUMER

Figure 1. Parasuraman et al.'s proposed service quality discrepancies (gaps) (Parasuraman et al., 1988).

This investigation identified 10 key criteria categories—referred to as the sought-after dimensions—which, after further research and refinement, were consolidated into 5: tangibles, reliability, responsiveness, assurance, and empathy. Tangibles refer to facilities, equipment, and personnel appearance. Reliability concerns the ability to deliver the promised service accurately. Responsiveness reflects the willingness to assist customers and provide prompt service. Assurance pertains to personnel expertise and their ability to inspire trust. Finally, empathy involves the provision of individualized care to customers. This body of work culminated in the development of a service quality model known as SERVQUAL, which follows the above five-dimensional structure. The model is designed to capture the perception of service performance, along with its expectation (Parasuraman et al., 1988). If perception falls below expectation, the service is deemed to provide low satisfaction. If perception matches expectation, the service is considered to provide adequate satisfaction. Finally, if perception exceeds expectation, the service is deemed to provide remarkable satisfaction (Parasuraman et al., 1988).

In our study we introduced and utilized a modified version of the SERVQUAL quality measurement instrument to capture the Department of Tourism Management (University of Patras, Greece) students' perceptions and expectations regarding the services provided

by the departmental administrative offices and to potentially detect areas of service that may require improvement or redesign. The proposed modification lies in replacing traditional Likert scales with continuous scales, capturing the variance between the assessment's underestimation and overestimation, enhancing the instrument by yielding more comprehensive insights. While SERVQUAL has been widely applied to assess service quality, most studies rely on fixed-point scales such as Likert scales, which are not capable of capturing the variance in respondents' evaluations. This novel approach addresses this gap in the existing literature, while also contributing to the broader body of research on administrative quality assessment in higher education.

3. Materials and Methods

3.1. Study Participants

The target population of our study consisted of undergraduate second- and third-year students from the Department of Tourism Management at the University of Patras (Patras, Greece). The study was conducted on 19 May 2024, with 129 participants attending lectures in two core second- and third-year courses within the department. The required sample size, calculated for a *z*-score based on a 90% confidence level and a 5% margin of error, was 116, making our sample size representative of the target population.

All procedures were carried out in accordance with the Helsinki Declaration (World Medical Association, 2024). Participation was entirely voluntary, and the data collection process was designed to ensure complete anonymity. Participants were informed about the purpose of the survey both verbally and in the preface section of the questionnaire, while written consent was obtained to permit the use of the collected data. Completing the questionnaire required approximately 15 min. Since the study did not pose any physical or psychological risks, supervision from an ethical review board was not deemed necessary (Whicher & Wu, 2015).

3.2. Survey

The deployment of the questionnaire was based on the SERVQUAL quality measurement instrument (Parasuraman et al., 1988). The instrument was tested in a pilot study, involving staff and students, to determine whether any modifications were necessary.

Several other measurement instruments have been developed (Moore, 1987; Heywood-Farmer, 1988; Beddowes et al., 1988; Nash, 1988; Philip & Hazlett, 1997; Robledo, 2001). However, SERVQUAL remains one of the most popular and widely used, cited, and researched quality assessment methods (Asubonteng et al., 1996; Robinson, 1999; Waugh, 2002) and is therefore highly trusted. Additionally, its design of empirical psychometric testing and trials enables its application across a broad range of service organizations (Wisniewski, 2001), provided proper adjustments are made. Examples include its successful adaptation for use in higher education (Broady-Preston & Preston, 1999; Hill, 1995; Galloway, 1998) and in tourism (Puri & Singh, 2018; Qolipour et al., 2018), which guided our decision to use it.

The survey consisted of 4 sections. Section A recorded demographic data, namely, gender, age, year of study, and whether the participant was raised in Athens (the capital of Greece). Section B aimed to capture the perception of service performance through 25 questions addressing each of the instrument's 5 dimensions. Section C focused on capturing the expectation of service performance, using the same 25 questions, adjusted to reflect the case of an ideal secretariat. Finally, section D sought to determine the order of importance among the dimensions. Students were asked to allocate 100 available points across the dimensions based on their perceived importance. Additionally, section D included 3 direct questions asking participants to rank the dimensions in order of importance.

These questions were intended to cross-check whether the point-based allocation aligned with the participants' stated ranking. In total, the questionnaire consisted of 62 questions: 4 demographics, 25 for perception, 25 for expectation, 5 for point-based ranking, and 3 for cross-checking the rankings.

To ensure relevance in the modern era, the instrument's questions were adapted to address contemporary advancements, including the role of digital and technological services in administrative support. Moreover, it was tailored to the Greek higher education system. Sections B and C were modified to accept ranges as input (with their endpoints ranging from 0 to 100), rather than relying on a traditional 5-point or 7-point Likert scale, aiming to capture the marginal behavior of underestimation and overestimation. Despite the above changes, the instrument retains its original philosophy intact (Appendix B.1). To explain the unfamiliar concept, participants were instructed to provide an answer ranging from their worst to their best experience related to the subject of each question. The introductions of sections B and C included multiple examples of demonstrative ranges to help familiarize participants with this concept. Additionally, it was emphasized that there were no "incorrect" ranges, thereby encouraging participants to respond freely and as they deemed appropriate. An electronic/computerized version of the survey could make use of sliders with dual handles, enabling participants to define the positions of both endpoints. This design could facilitate their understanding of the concept of continuous scales without the need for additional clarification.

3.3. Processing

The database containing the survey responses was managed using Microsoft Excel (Microsoft Corporation, 2018) and analyzed using the Statistical Package for Social Sciences (IBM Corp., 2023). The results were presented using both software programs. A *p*-value of less than 0.05 was considered necessary for a finding to be deemed statistically significant. Moreover, the internal reliability of the survey was assessed using Cronbach's alpha.

Questionnaires with unsuitable answers in the demographic section (section A) were excluded from the demographic statistical analysis. Additionally, questionnaires with 5 or more unsuitable answers in section B (i.e., 20% or more of the total questions in the section) were excluded from this section's analysis. Questionnaires excluded from section B were not eligible for inclusion in section C's analysis. From those included in section B, questionnaires with 5 or more unsuitable answers in section C (i.e., 20% or more of the total questions in the section) were excluded from this section's analysis. Finally, regarding section D, questionnaires that did not pass the significance level check were excluded from this section's analysis. Unsuitable answers included the following: no answer, failure to give a range, upside-down ranges, or ranges wider than 39 (considered too wide to provide meaningful information). The limit of 39 was set to prevent answers using more than 2 points on a 5-point Likert scale after conversion.

This protocol resulted in the following exclusions: 2 exclusions from section A (127 valid), 11 from section B (118 valid), 5 additional exclusions from section C (113 valid), and 76 from section D (leaving 53 valid questionnaires after the significance level test).

3.4. Analysis

The study of marginal behavior involves two separate analyses: one for the underestimated and one for the overestimated students' evaluation. Based on the assumption that the actual evaluation of the provided services lies within the area between underestimation and overestimation, we propose the following cases:

C1: If the overestimated perception is lower than the underestimated expectation, then the provided services are deemed unsatisfactory.

C2: If the overestimated expectation is lower than the underestimated perception, then the provided services are deemed highly satisfactory.

C3: If the overestimated perception is higher than the underestimated expectation or if the overestimated expectation is higher than the underestimated perception, then the provided services are deemed satisfactory.

Furthermore, we are allowed to state that the magnitude and consistency of this difference indicate how well established the corresponding conclusion is.

Based on the above assumption and proposed cases, the following results will address the research question of which of these cases applies to this study's evaluation.

4. Results

4.1. Demographics

A total of 49 males (38%) and 78 females (60.4%) participated in the study. In terms of age, the largest group was students aged 20 years (46.5%), while second-year students (65%) constituted the majority. Most of the participants were not raised in Athens (68.2%) (Figure 2).
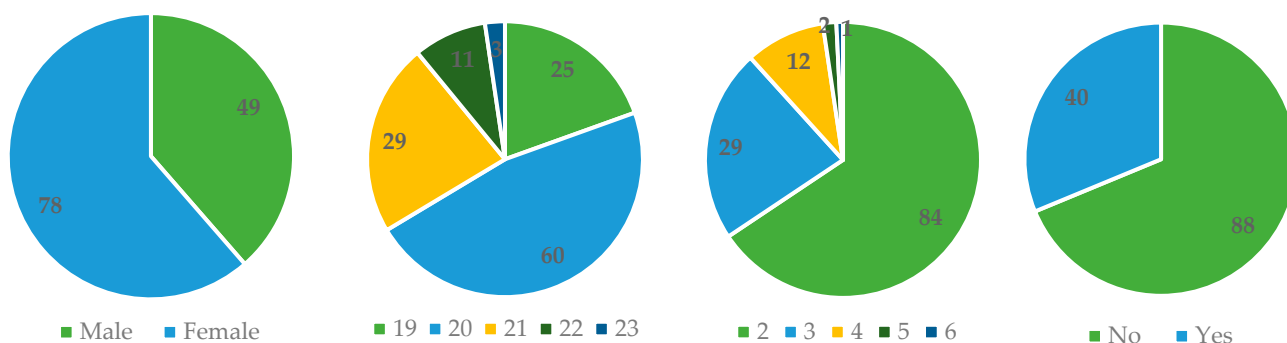
Figure 2. Demographic variables: gender, age, year of study, and upbringing in Athens.

4.2. Dimension Significance

The most significant dimension was found to be "reliability" (34%), and the second most important was "responsiveness" (41.5%), while the least significant was found to be "tangibles" (64.2%) (Figure 3).
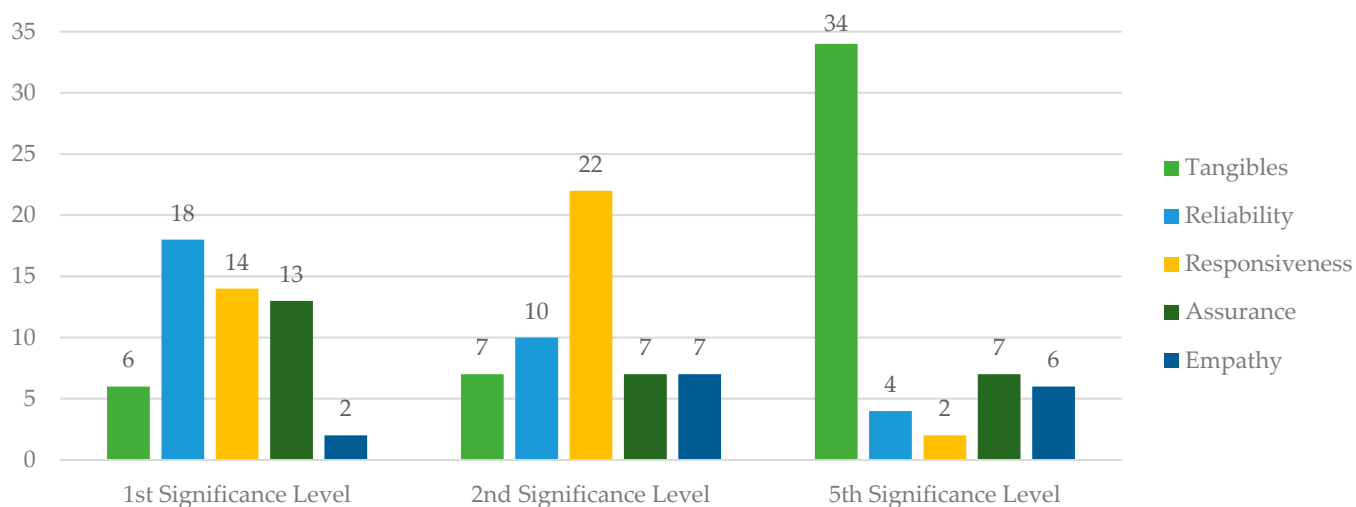
Figure 3. Significance level: first most important, second most important, and least important dimension.

4.3. Descriptive Statistics

Figures 4 and 5 present the boxplots of variables 5–29 (perception) and 30–54 (expectation), for underestimation and overestimation, respectively. Notably, perception demonstrated fewer outliers compared with expectation, which exhibited significantly more, in both cases.
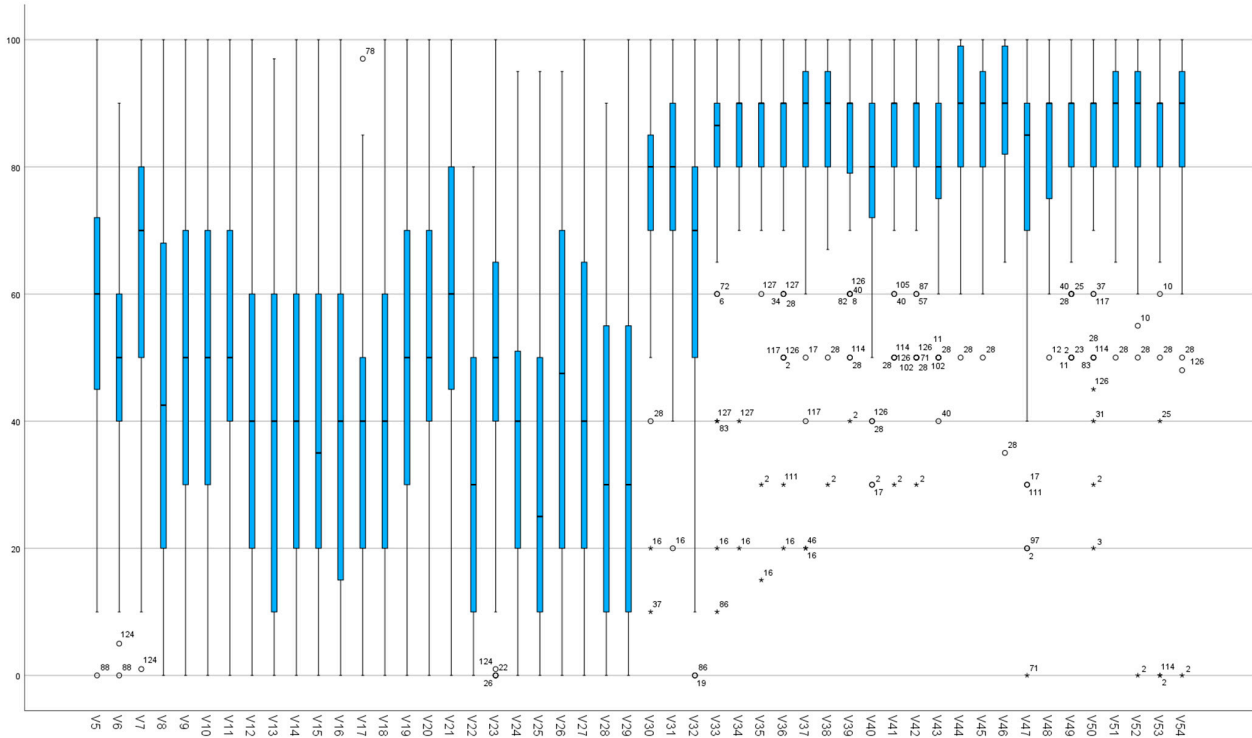
Figure 4. Boxplots of variables 5–29 (perception) and variables 30–54 (expectation): underestimation.
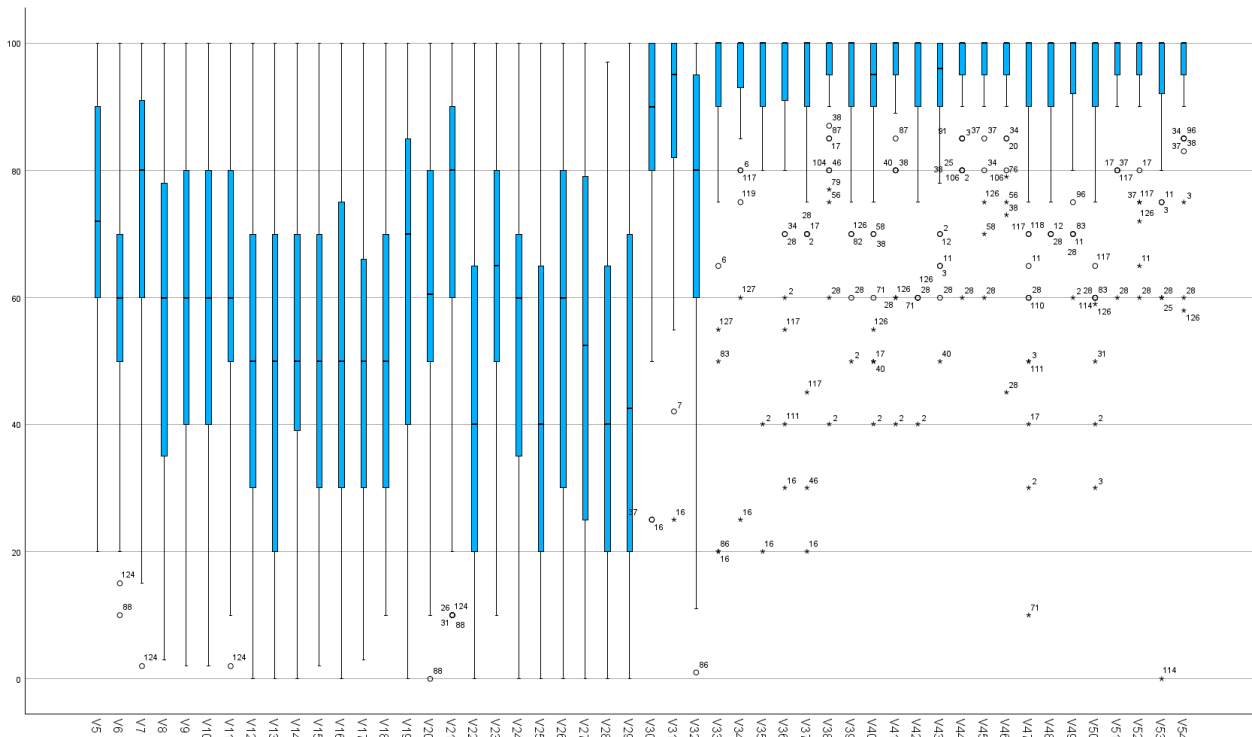
Figure 5. Boxplots of variables 5–29 (perception) and 30–54 (expectation): overestimation.

Figures 6 and 7 present the basic central tendency measures for the underestimated and overestimated responses depicted in variables 5–29 (perception) and 30–54 (expectation).
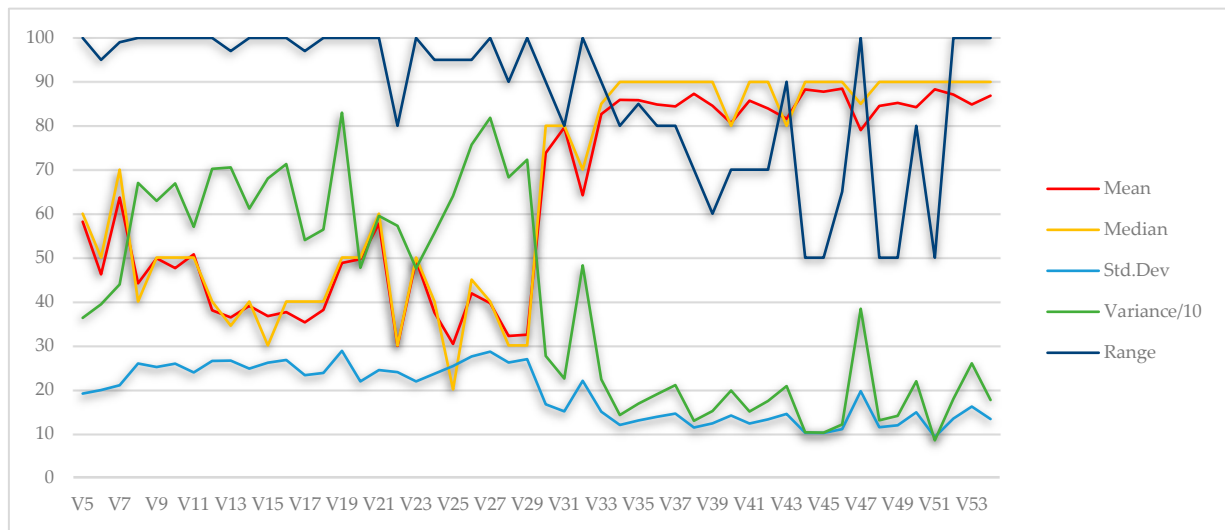
Figure 6. Valid, missing, mean, median, std. dev, variance (divided by 10), and range for variables 5–29 (perception) and 30–54 (expectation): underestimation.
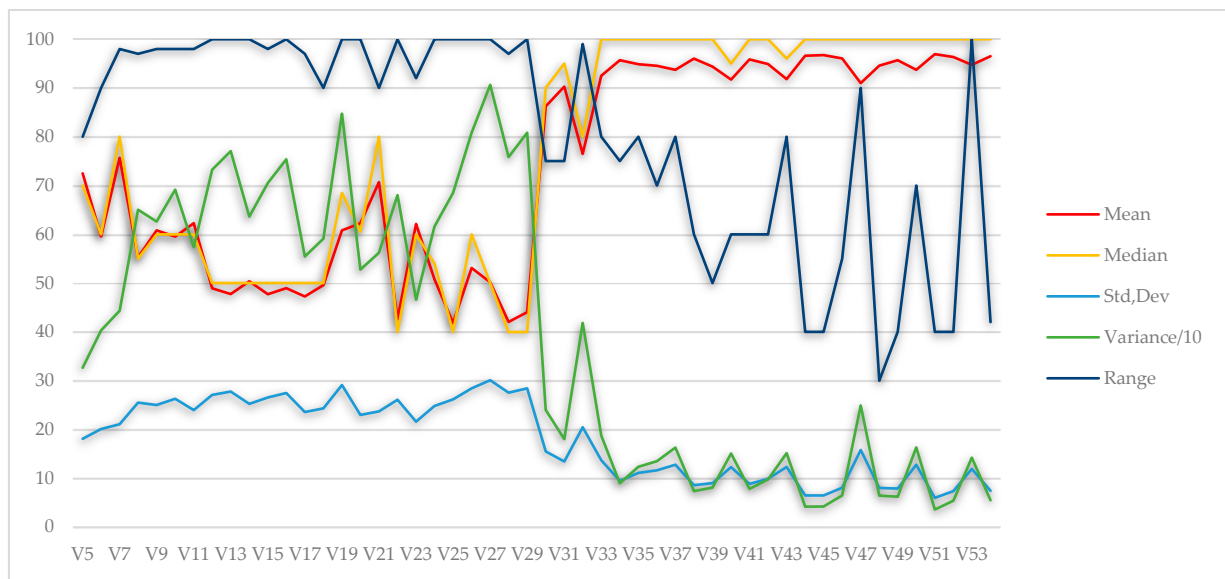
Figure 7. Valid, missing, mean, median, std. dev, variance (divided by 10), and range for variables 5–29 (perception) and 30–54 (expectation): overestimation.

Finally, the internal consistency of the questionnaire was confirmed through the Cronbach's alpha estimation, as shown in Table 1.

Table 1. Cronbach's alpha for variable groups: 5–29 and 30–54.

N of Items	Cronbach's Alpha	
	Underestimation	**Overestimation**
25 (variables 5–29)	0.955	0.957
25 (variables 30–54)	0.924	0.899
50 (variables 5–54)	0.934	0.937

The detailed data statistical description is presented in Appendix A, in Tables A1–A14.

4.4. Comparison of Under- and Overestimation

Table 2 presents the difference between the mean expectation and the mean perception for each question, scaled from 0 to 5. Table 3 presents the difference between the underestimation of expectation and overestimation of perception. For all questions—except Q3—the overestimated perception was consistently below the underestimated expectation (the minus signifies that perception was lower than expectation). These values confirmed the first case (C1) of our proposed framework, indicating that the provided services were unsatisfactory. Furthermore, the magnitude and consistency of the difference indicated that this was a well-established conclusion. Figure 8 shows the boundaries of both perception and expectation, along with mean perception and mean expectation, while Figure 9 shows them in superimposed bars, providing a visual representation of the difference between them.

Table 2. Differences between the (scaled from 0 to 5) mean expectation and mean perception.

Question	Difference	Value	Question	Difference	Value
1	V5–V30	−0.76	14	V18–V43	−2.14
2	V6–V31	−1.61	15	V19–V44	−1.87
3	V7–V32	−0.04	16	V20–V45	−1.81
4	V8–V33	−1.91	17	V21–V46	−1.41
5	V9–V34	−1.78	18	V22–V47	−2.46
6	V10–V35	−1.85	19	V23–V48	−1.70
7	V11–V36	−1.66	20	V24–V49	−2.33
8	V12–V37	−2.29	21	V25–V50	−2.65
9	V13–V38	−2.48	22	V26–V51	−2.25
10	V14–V39	−2.23	23	V27–V52	−2.34
11	V15–V40	−2.18	24	V28–V53	−2.64
12	V16–V41	−2.36	25	V29–V54	−2.63
13	V17–V42	−2.40			

Table 3. Differences between the (scaled from 0 to 5) underestimation of expectation and overestimation of perception.

Question	Difference Exp. (Under)–Perc. (Over)	Value	Question	Difference Exp. (Under)–Perc. (Over)	Value
1	V5–V30	−0.07	14	V18–V43	−1.60
2	V6–V31	−1.00	15	V19–V44	−1.37
3	V7–V32	0.57	16	V20–V45	−1.28
4	V8–V33	−1.37	17	V21–V46	−0.89
5	V9–V34	−1.25	18	V22–V47	−1.82
6	V10–V35	−1.31	19	V23–V48	−1.12
7	V11–V36	−1.13	20	V24–V49	−1.72
8	V12–V37	−1.77	21	V25–V50	−2.12
9	V13–V38	−1.98	22	V26–V51	−1.76
10	V14–V39	−1.71	23	V27–V52	−1.85
11	V15–V40	−1.64	24	V28–V53	−2.14
12	V16–V41	−1.84	25	V29–V54	−2.14
13	V17–V42	−1.83			
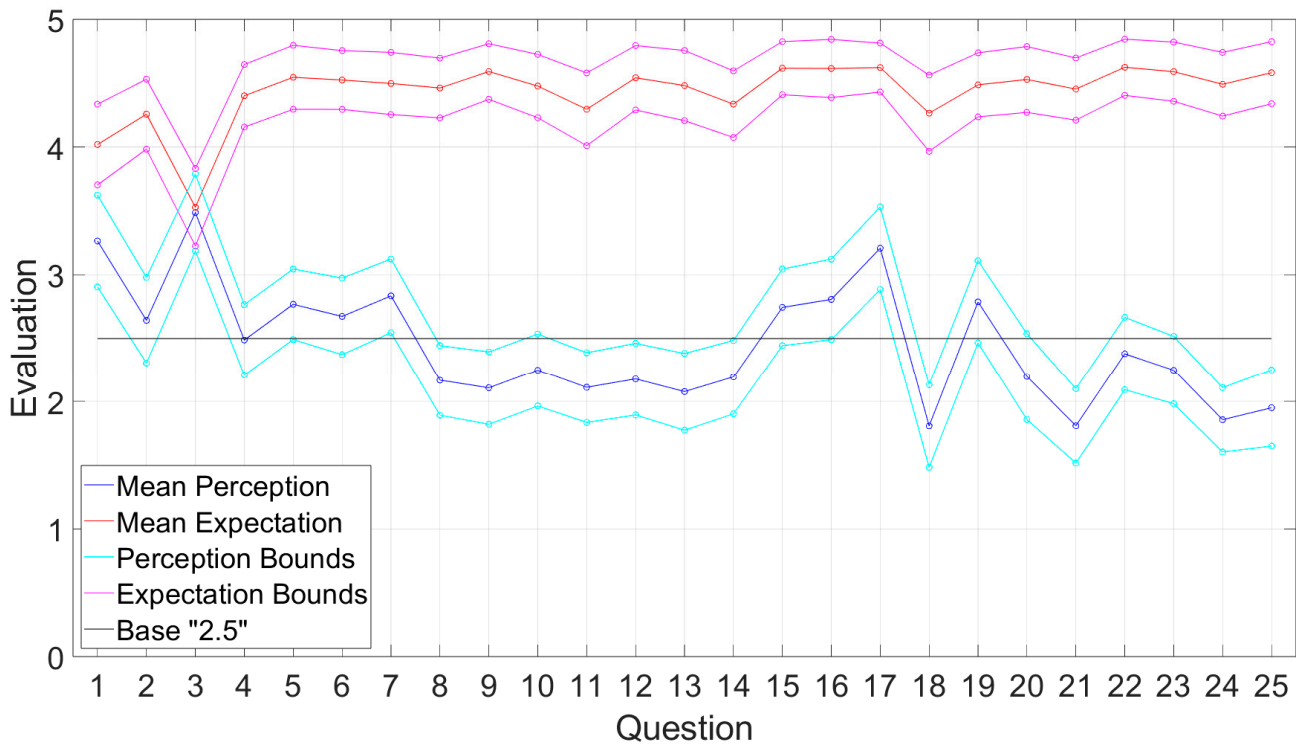
Figure 8. Graph of the scaled boundaries of perception and expectation, along with their respective means and a "base 2.5" line.
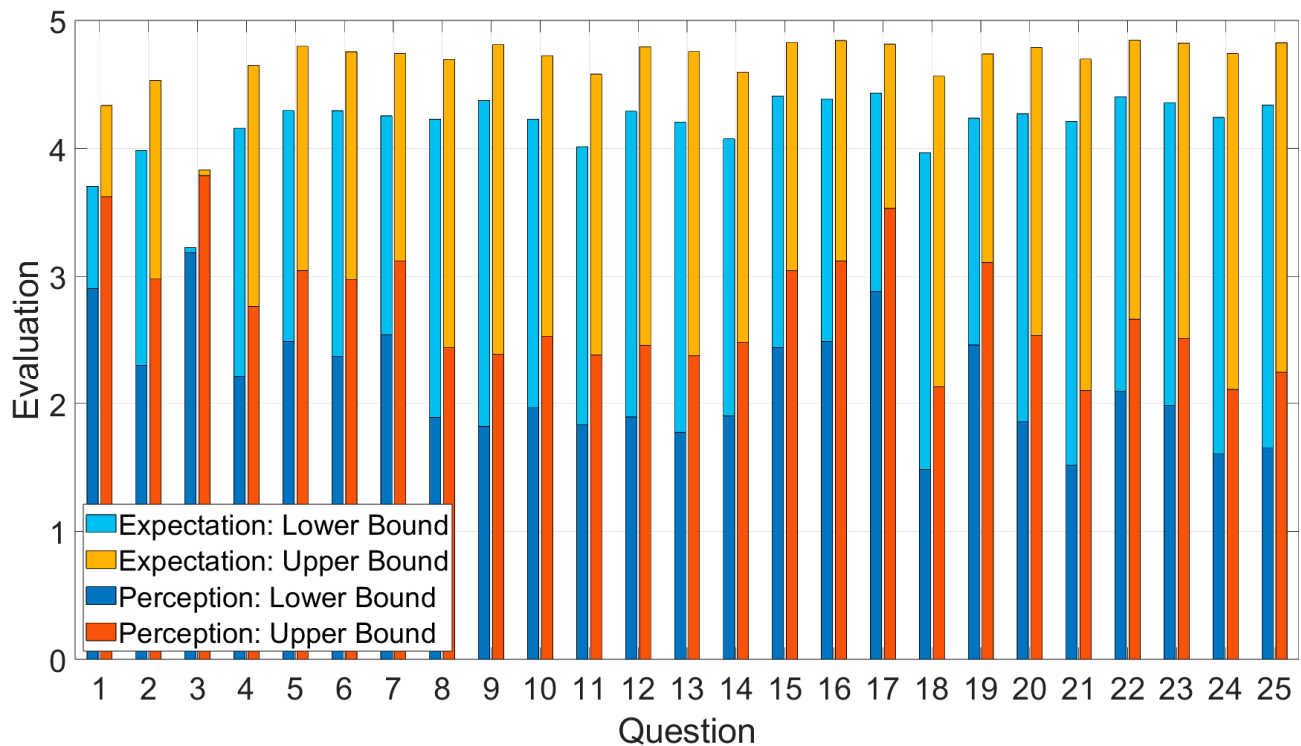
Figure 9. Bar graph of the scaled boundaries of expectation, superimposed by perception.

5. Discussion

The captured perception of service performance consistently and significantly fell below expectations, thus deeming it unsatisfactory (C1). The magnitude and consistency of this difference indicated that this was a well-established conclusion. The only exception

was Q3, which concerned the secretariat's appropriate appearance, which was deemed adequate. Moreover, 13 of the 25 perceptions were found to be below half of their respective expectations (i.e., below their relative "base").

With the exception of Q3, the difference between perception boundaries spanned from 1.48 to 3.62. This range was nearly double for the expectation, which spanned from 3.70 to 4.84. Additionally, expectation exhibited significantly more outliers than perception. This phenomenon suggested that students shared a relatively uniform perception of service performance, making perception appear more objective. By contrast, what is considered ideal performance (expectation) varies widely among students, making expectation appear more subjective.

Reliability was identified as the most important dimension, defined as the ability to deliver the promised service accurately. Responsiveness, referring to the willingness to assist customers and provide prompt service, was ranked as the second most important dimension. Finally, the least important was deemed to be tangibles, encompassing facilities, equipment, and personnel appearance. These findings aligned with those reported in similar studies (Brysland & Curry, 2001; Donnelly & Shiu, 1999; Donnelly et al., 1995; Smith et al., 2007). Zeithaml et al. (1990) observed a consistent ranking of service quality attributes, with reliability typically emerging as the most important dimension and tangibles as the least important.

Excluding a few isolated cases, neither age nor whether a student was raised in Athens significantly affected perception or expectation. However, females appeared to evaluate the provided service (perception) more critically than males, with males consistently assigning higher ratings across all affected variables, particularly in the upper endpoints of perception. Notably, no significant difference was detected between male and female expectations.

Furthermore, second-year students were observed to have higher expectations than third-year students, while no significant differences were recorded in their perceptions. Since age did not appear to influence the reduction in expectations, it may be inferred that this decline was not directly related to growing older but rather to department-wise or academic-wise experiences.

Regarding the questionnaire's completion process, it is worth noting that explaining the concept of continuous scales proved more challenging for participants to understand compared with the traditional Likert scale. Additionally, it was observed that participants tended to follow uniform patterns when completing the survey, with the majority providing endpoints consistently ending in 0 s or 5 s throughout.

The use of continuous scales appeared to provide a more comprehensive assessment compared with traditional Likert scales. By evaluating services using the endpoints of these scales, instead of point values, the proposed modification of SERVQUAL enabled a detailed mapping of the evaluation area between underestimated and overestimated perceptions and expectations of service performance. This allowed a more accurate assessment compared with traditional Likert scales, which only captured an instantaneous mean value, which was, however, described by an inherent variability (Westland, 2022; Zeng et al., 2024). The proposed modification enabled the delineation of this variability. Furthermore, when the overestimated perception fell below the underestimated expectation (and vice versa), we had strong indications that they were strictly ordered. Conversely, when the overestimated perception overlapped with the underestimated expectation (and vice versa), we had strong indications they were relatively closed, even if their means appeared ordered—a limitation that would occur with a traditional Likert scale.

As a result, the proposed modification offers greater clarity in identifying the differences between perception and expectation. This enhanced precision offers more enriched insights into service performance and can potentially support the development of

better-targeted corrective measures to address specific gaps. Additionally, this approach introduces a new perspective in evaluating tourism services, positioning itself as a valuable novel research tool. However, the approach does have its drawbacks. These include the challenge of explaining the concept of range-based answers to participants, as well as the increased workload it entails: since this method effectively combines two independent analyses—one for underestimation and one for overestimation—it requires additional time and effort to implement.

Using this modified version of the SERVQUAL quality measurement instrument, our study quantified deviations from the expected performance in the services provided by the secretariat of the Department of Tourism Management. This analysis serves as a foundational step toward identifying and implementing appropriate corrective measures. The findings highlight the potential for further research and broader application of this approach in any context where the SERVQUAL tool is utilized.

Research Limitations

The study relied exclusively on a quantitative approach, inherently limiting its scope to quantitative data. Future studies should incorporate a mixed-methods approach, which could enrich the analysis by including qualitative data (e.g., interviews) alongside the quantitative data (e.g., questionnaires), thereby providing deeper insights. For example, qualitative data might help identify specific issues within individual elements of each dimension that received a low rating. It has been suggested that service quality evaluation should not rely solely on fixed-choice questions. Instead, respondents should be given the opportunity to provide open-ended feedback on all aspects of the service they received (Philip & Hazlett, 2001). The study focused mainly on second-year students, given its pilot nature. To increase generalizability of the findings within the department, future studies should include students from all academic years. Furthermore, the study was limited to a single university department. To achieve broader generalizability, future research should encompass multiple departments and, ideally, other universities as well. These studies should also account for institutional, cultural, or other contextual factors that could potentially affect students' expectations and perceptions, expanding the list of demographic variables in order to take them into account. Additionally, thorough attention should be paid to ensuring that the phrasing of questions is neutral and independent of such factors, among students, to minimize bias.

Appendix A

Table A1. Shapiro–Wilk normality test (for lower endpoints).

Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value
V5	0.970	0.022	V22	0.922	<0.001	V39	0.909	<0.001
V6	0.978	0.092	V23	0.975	0.046	V40	0.856	<0.001
V7	0.943	<0.001	V24	0.961	0.005	V41	0.834	<0.001
V8	0.970	0.019	V25	0.921	<0.001	V42	0.872	<0.001
V9	0.978	0.095	V26	0.947	<0.001	V43	0.927	<0.001
V10	0.970	0.020	V27	0.942	<0.001	V44	0.882	<0.001
V11	0.976	0.063	V28	0.918	<0.001	V45	0.881	<0.001
V12	0.952	0.001	V29	0.922	<0.001	V46	0.826	<0.001
V13	0.946	<0.001	V30	0.912	<0.001	V47	0.834	<0.001
V14	0.964	0.007	V31	0.909	<0.001	V48	0.918	<0.001
V15	0.949	<0.001	V32	0.955	0.002	V49	0.891	<0.001
V16	0.948	<0.001	V33	0.792	<0.001	V50	0.812	<0.001
V17	0.960	0.003	V34	0.785	<0.001	V51	0.885	<0.001
V18	0.964	0.007	V35	0.773	<0.001	V52	0.732	<0.001
V19	0.945	<0.001	V36	0.802	<0.001	V53	0.706	<0.001
V20	0.970	0.019	V37	0.793	<0.001	V54	0.721	<0.001
V21	0.956	0.002	V38	0.842	<0.001			

Table A2. Mann–Whitney U test for V1: gender (for lower endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	1501.000	0.694	V22	1366.500	0.142	V39	1557.500	0.497
V6	1532.000	0.737	V23	1496.500	0.535	V40	1352.500	0.069
V7	1194.500	0.031	V24	1265.000	0.042	V41	1548.500	0.464
V8	1508.000	0.638	V25	1296.500	0.063	V42	1532.000	0.412
V9	1342.000	0.110	V26	1247.500	0.033	V43	1638.000	0.820
V10	1584.500	0.808	V27	1380.000	0.166	V44	1480.500	0.322
V11	1297.500	0.065	V28	1366.500	0.143	V45	1495.500	0.305
V12	1289.000	0.107	V29	1585.500	0.945	V46	1438.000	0.178
V13	1306.000	0.072	V30	1556.500	0.496	V47	1510.000	0.351
V14	1477.000	0.398	V31	1594.500	0.639	V48	1379.500	0.095
V15	1199.000	0.016	V32	1439.500	0.257	V49	1537.500	0.430
V16	1166.000	0.013	V33	1595.000	0.639	V50	1486.500	0.284
V17	1256.500	0.038	V34	1497.500	0.308	V51	1655.500	0.895
V18	1262.500	0.062	V35	1625.500	0.764	V52	1623.000	0.754
V19	1081.500	0.002	V36	1619.500	0.737	V53	1490.500	0.290
V20	1073.000	0.002	V37	1472.000	0.250	V54	1528.500	0.468
V21	1033.000	0.001	V38	1601.000	0.666			

Table A3. Kruskal–Wallis H test for V2: age (for lower endpoints).

Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value
V5	0.051	0.975	V22	0.266	0.875	V39	0.383	0.826
V6	1.828	0.401	V23	0.629	0.730	V40	0.101	0.951
V7	0.714	0.700	V24	0.183	0.913	V41	0.026	0.987
V8	1.692	0.429	V25	1.365	0.505	V42	0.642	0.725
V9	4.561	0.102	V26	0.561	0.756	V43	1.601	0.449
V10	3.593	0.166	V27	1.682	0.431	V44	0.319	0.853
V11	1.832	0.400	V28	6.357	0.042	V45	0.390	0.823
V12	3.346	0.188	V29	2.061	0.357	V46	0.537	0.764

Table A3. *Cont.*

Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value
V13	1.548	0.461	V30	0.077	0.962	V47	2.712	0.258
V14	0.660	0.719	V31	0.906	0.636	V48	1.451	0.484
V15	1.454	0.483	V32	0.259	0.879	V49	1.199	0.549
V16	0.675	0.714	V33	0.445	0.800	V50	1.421	0.491
V17	0.325	0.850	V34	0.180	0.914	V51	0.209	0.901
V18	1.194	0.551	V35	0.096	0.953	V52	0.525	0.769
V19	1.249	0.536	V36	0.333	0.847	V53	1.133	0.568
V20	2.264	0.322	V37	0.983	0.612	V54	0.093	0.954
V21	0.842	0.656	V38	0.209	0.901			

Table A4. Mann–Whitney U test for V3: year of study (for lower endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	945.500	0.484	V22	813.000	0.064	V39	882.000	0.104
V6	899.500	0.257	V23	919.000	0.323	V40	898.500	0.134
V7	937.500	0.702	V24	923.000	0.295	V41	806.500	0.029
V8	902.000	0.267	V25	894.500	0.209	V42	869.000	0.086
V9	834.500	0.092	V26	1054.500	0.930	V43	982.000	0.373
V10	866.000	0.145	V27	755.500	0.024	V44	793.000	0.028
V11	864.000	0.140	V28	660.500	0.003	V45	833.000	0.048
V12	945.000	0.602	V29	799.500	0.073	V46	657.000	0.001
V13	942.000	0.365	V30	861.000	0.077	V47	979.000	0.363
V14	913.500	0.265	V31	969.000	0.324	V48	873.500	0.093
V15	786.000	0.041	V32	769.500	0.020	V49	625.500	<0.001
V16	839.000	0.161	V33	833.500	0.049	V50	865.500	0.083
V17	910.500	0.255	V34	819.500	0.038	V51	777.500	0.017
V18	871.000	0.180	V35	988.500	0.394	V52	853.000	0.067
V19	1031.000	0.796	V36	1070.500	0.796	V53	900.500	0.134
V20	844.500	0.105	V37	851.000	0.067	V54	696.000	0.006
V21	993.000	0.658	V38	895.500	0.131			

Table A5. Mann–Whitney U test for V4: raised in Athens (for lower endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	1323.000	0.483	V22	1448.000	0.768	V39	1481.000	0.751
V6	1297.000	0.338	V23	1338.000	0.402	V40	1517.000	0.915
V7	1365.500	0.567	V24	1460.000	0.822	V41	1410.000	0.464
V8	1282.000	0.297	V25	1356.000	0.405	V42	1465.500	0.684
V9	1293.000	0.232	V26	1427.500	0.679	V43	1523.000	0.943
V10	1370.500	0.456	V27	1365.000	0.437	V44	1513.500	0.984
V11	1365.500	0.438	V28	1330.500	0.327	V45	1380.500	0.367
V12	1391.500	0.875	V29	1313.000	0.325	V46	1437.500	0.568
V13	1310.500	0.273	V30	1441.000	0.585	V47	1417.500	0.498
V14	1286.000	0.215	V31	1512.500	0.894	V48	1438.500	0.574
V15	1223.500	0.109	V32	1500.000	0.922	V49	1332.500	0.239
V16	1232.000	0.144	V33	1535.500	1.000	V50	1425.000	0.522
V17	1382.000	0.497	V34	1535.000	0.998	V51	1357.500	0.298
V18	1397.000	0.717	V35	1534.500	0.995	V52	1520.000	0.928
V19	1435.000	0.712	V36	1390.000	0.393	V53	1384.000	0.376
V20	1414.500	0.624	V37	1526.500	0.958	V54	1385.500	0.437
V21	1318.500	0.341	V38	1355.000	0.298			

Table A6. Statistically significant differences by V1: gender (for lower endpoints).

Variable	Gender	N	Mean Rank	Sum of Ranks	Variable	Gender	N	Mean Rank	Sum of Ranks
V7	Male	43	67.22	2890.5	V20	Male	44	72.11	3173.0
	Female	73	53.36	3895.5		Female	74	52.0	3848.0
	Total	116				Total	118		
V15	Male	44	69.25	3047.0	V21	Male	44	72.02	3169.0
	Female	74	53.7	3974.0		Female	73	51.15	3734.0
	Total	118				Total	117		
V16	Male	44	69.0	3036.0	V24	Male	44	67.75	2981.0
	Female	73	52.97	3867.0		Female	74	54.59	4040.0
	Total	117				Total	118		
V17	Male	44	67.94	2989.5	V26	Male	44	68.15	2998.5
	Female	74	54.48	4031.5		Female	74	54.36	4022.5
	Total	118				Total	118		
V19	Male	44	71.92	3164.5					
	Female	74	52.11	3856.5					
	Total	118							

Table A7. Statistically significant differences by V3: year of study (for lower endpoints).

Variable	Year	N	Mean Rank	Sum of Ranks	Variable	Year	N	Mean Rank	Sum of Ranks
V32	2nd Year	78	57.63	4495.5	V45	2nd Year	79	57.46	4539.0
	3rd Year	28	41.98	1175.5		3rd Year	28	44.25	1239.0
	Total	106				Total	107		
V33	2nd Year	79	57.45	4538.5	V46	2nd Year	79	59.68	4715.0
	3rd Year	28	44.27	1239.5		3rd Year	28	37.96	1063.0
	Total	107				Total	107		
V34	2nd Year	79	57.63	4552.5	V49	2nd Year	79	60.08	4746.5
	3rd Year	28	43.77	1225.5		3rd Year	28	36.84	1031.5
	Total	107				Total	107		
V41	2nd Year	79	57.79	4565.5	V51	2nd Year	79	58.16	4594.5
	3rd Year	28	43.3	1212.5		3rd Year	28	42.27	1183.5
	Total	107				Total	107		
V44	2nd Year	78	57.33	4472.0	V54	2nd Year	79	58.19	4597.0
	3rd Year	28	42.82	1199.0		3rd Year	27	39.78	1074.0
	Total	106				Total	106		

Table A8. Shapiro–Wilk normality test (for upper endpoints).

Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value
V5	0.957	0.002	V22	0.956	0.002	V39	0.683	<0.001
V6	0.968	0.015	V23	0.970	0.020	V40	0.696	<0.001
V7	0.903	<0.001	V24	0.970	0.022	V41	0.488	<0.001
V8	0.969	0.017	V25	0.955	0.002	V42	0.580	<0.001
V9	0.967	0.011	V26	0.955	0.002	V43	0.748	<0.001
V10	0.958	0.003	V27	0.948	<0.001	V44	0.600	<0.001
V11	0.958	0.003	V28	0.945	<0.001	V45	0.557	<0.001
V12	0.968	0.013	V29	0.943	<0.001	V46	0.512	<0.001
V13	0.956	0.002	V30	0.808	<0.001	V47	0.614	<0.001
V14	0.970	0.019	V31	0.737	<0.001	V48	0.712	<0.001
V15	0.960	0.004	V32	0.895	<0.001	V49	0.615	<0.001
V16	0.954	0.001	V33	0.572	<0.001	V50	0.545	<0.001
V17	0.969	0.017	V34	0.467	<0.001	V51	0.551	<0.001

Table A8. *Cont.*

Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value	Variable	S–W Statistic	*p*-Value
V18	0.962	0.005	V35	0.494	<0.001	V52	0.548	<0.001
V19	0.929	<0.001	V36	0.521	<0.001	V53	0.465	<0.001
V20	0.965	0.008	V37	0.524	<0.001	V54	0.516	<0.001
V21	0.916	<0.001	V38	0.505	<0.001			

Table A9. Mann–Whitney U test for V1: gender (for upper endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	1464.000	0.544	V22	1168.000	0.010	V39	1575.000	0.526
V6	1519.000	0.682	V23	1482.000	0.483	V40	1441.000	0.169
V7	1152.500	0.017	V24	1221.500	0.023	V41	1664.000	0.922
V8	1506.500	0.632	V25	1294.500	0.063	V42	1656.500	0.884
V9	1276.500	0.050	V26	1263.000	0.042	V43	1657.000	0.897
V10	1513.500	0.523	V27	1347.000	0.117	V44	1510.000	0.327
V11	1251.500	0.036	V28	1358.500	0.133	V45	1545.000	0.357
V12	1249.000	0.066	V29	1437.500	0.363	V46	1467.000	0.146
V13	1248.500	0.034	V30	1508.500	0.336	V47	1532.500	0.379
V14	1397.500	0.198	V31	1508.500	0.319	V48	1411.000	0.099
V15	1151.000	0.008	V32	1467.000	0.327	V49	1579.500	0.521
V16	1151.000	0.010	V33	1636.500	0.795	V50	1432.500	0.114
V17	1215.000	0.021	V34	1608.000	0.639	V51	1553.500	0.407
V18	1225.000	0.038	V35	1655.500	0.877	V52	1659.500	0.897
V19	1078.500	0.002	V36	1660.000	0.899	V53	1595.500	0.596
V20	1062.000	0.002	V37	1562.000	0.465	V54	1624.000	0.825
V21	935.000	<0.001	V38	1590.500	0.540			

Table A10. Kruskal–Wallis H test for V2: age (for upper endpoints).

Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value	Variable	K–W Statistic	*p*-Value
V5	0.292	0.864	V22	0.066	0.968	V39	0.168	0.920
V6	2.015	0.365	V23	1.465	0.481	V40	2.117	0.347
V7	1.011	0.603	V24	0.061	0.970	V41	0.243	0.885
V8	2.818	0.244	V25	1.658	0.436	V42	0.139	0.933
V9	4.795	0.091	V26	0.549	0.760	V43	0.688	0.709
V10	2.216	0.330	V27	1.650	0.438	V44	0.523	0.770
V11	3.159	0.206	V28	5.527	0.063	V45	1.974	0.373
V12	3.002	0.223	V29	0.981	0.612	V46	2.590	0.274
V13	1.160	0.560	V30	0.203	0.904	V47	2.681	0.262
V14	0.730	0.694	V31	0.639	0.727	V48	0.244	0.885
V15	1.732	0.421	V32	0.191	0.909	V49	2.457	0.293
V16	0.401	0.818	V33	1.101	0.577	V50	2.096	0.351
V17	0.537	0.765	V34	1.067	0.586	V51	2.514	0.285
V18	1.538	0.464	V35	0.798	0.671	V52	2.043	0.360
V19	1.182	0.554	V36	1.061	0.588	V53	1.925	0.382
V20	1.568	0.457	V37	0.316	0.854	V54	4.191	0.123
V21	0.884	0.643	V38	0.248	0.883			

Table A11. Mann–Whitney U test for V3: year of study (for upper endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	957.000	0.539	V22	821.000	0.074	V39	927.000	0.156
V6	892.500	0.236	V23	933.000	0.377	V40	899.000	0.123

Table A11. *Cont.*

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V7	912.000	0.564	V24	983.000	0.544	V41	898.000	0.087
V8	929.500	0.364	V25	966.000	0.465	V42	868.500	0.049
V9	826.500	0.081	V26	1062.000	0.974	V43	984.000	0.356
V10	911.500	0.260	V27	736.000	0.016	V44	934.500	0.177
V11	875.000	0.163	V28	672.500	0.004	V45	934.500	0.132
V12	960.000	0.685	V29	834.500	0.128	V46	862.000	0.036
V13	960.000	0.438	V30	904.000	0.140	V47	1005.500	0.436
V14	946.500	0.383	V31	1070.500	0.788	V48	882.500	0.079
V15	781.500	0.038	V32	854.500	0.086	V49	737.000	0.002
V16	892.500	0.317	V33	1027.500	0.541	V50	893.500	0.086
V17	935.000	0.339	V34	1033.500	0.547	V51	771.500	0.005
V18	905.000	0.276	V35	1097.500	0.943	V52	881.500	0.060
V19	1063.500	0.983	V36	1031.500	0.533	V53	974.500	0.289
V20	871.500	0.156	V37	979.500	0.313	V54	684.000	<0.001
V21	1006.000	0.729	V38	925.000	0.116			

Table A12. Mann–Whitney U test for V4: raised in Athens (for upper endpoints).

Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value	Variable	M–W Statistic	*p*-Value
V5	1306.500	0.423	V22	1423.000	0.660	V39	1503.000	0.837
V6	1341.000	0.486	V23	1391.500	0.602	V40	1361.500	0.296
V7	1280.000	0.280	V24	1400.500	0.568	V41	1467.000	0.645
V8	1253.000	0.225	V25	1405.500	0.588	V42	1330.500	0.168
V9	1286.500	0.218	V26	1403.500	0.580	V43	1416.000	0.466
V10	1384.000	0.505	V27	1395.500	0.549	V44	1509.000	0.956
V11	1396.000	0.551	V28	1305.500	0.262	V45	1425.500	0.435
V12	1413.500	0.981	V29	1371.500	0.524	V46	1467.000	0.627
V13	1273.000	0.189	V30	1506.500	0.865	V47	1448.000	0.585
V14	1302.500	0.254	V31	1513.000	0.891	V48	1406.500	0.409
V15	1259.500	0.164	V32	1474.500	0.806	V49	1361.500	0.245
V16	1258.000	0.192	V33	1513.000	0.886	V50	1496.000	0.793
V17	1437.500	0.723	V34	1496.500	0.789	V51	1212.000	0.027
V18	1422.500	0.833	V35	1499.000	0.803	V52	1392.000	0.326
V19	1412.000	0.615	V36	1482.000	0.712	V53	1492.500	0.777
V20	1461.500	0.829	V37	1440.000	0.536	V54	1484.500	0.817
V21	1252.500	0.180	V38	1488.500	0.736			

Table A13. Statistically significant differences by V1: gender (for upper endpoints).

Variable	Gender	N	Mean Rank	Sum of Ranks	Variable	Gender	N	Mean Rank	Sum of Ranks
V7	Male	43	68.20	2932.50	V18	Male	43	67.51	2903.00
	Female	73	52.79	3853.50		Female	74	54.05	4000.00
	Total	116				Total	117		
V9	Male	44	67.49	2969.50	V19	Male	44	71.99	3167.50
	Female	74	54.75	4051.50		Female	74	52.07	3853.50
	Total	118				Total	118		
V11	Male	44	68.06	2994.50	V20	Male	44	72.36	3184.00
	Female	74	54.41	4026.50		Female	74	51.85	3837.00
	Total	118				Total	118		

Table A13. *Cont.*

Variable	Gender	N	Mean Rank	Sum of Ranks	Variable	Gender	N	Mean Rank	Sum of Ranks
V13	Male	44	68.13	2997.50	V21	Male	44	74.25	3267.00
	Female	74	54.37	4023.50		Female	73	49.81	3636.00
	Total	118				Total	117		
V15	Male	44	70.34	3095.00	V22	Male	44	69.95	3078.00
	Female	74	53.05	3926.00		Female	74	53.28	3943.00
	Total	118				Total	118		
V16	Male	44	69.34	3051.00	V24	Male	44	68.74	3024.50
	Female	73	52.77	3852.00		Female	74	54.01	3996.50
	Total	117				Total	118		
V17	Male	44	68.89	3031.00	V26	Male	44	67.80	2983.00
	Female	74	53.92	3990.00		Female	74	54.57	4038.00
	Total	118				Total	118		

Table A14. Statistically significant differences by V3: year of study (for upper endpoints).

Variable	Year	N	Mean Rank	Sum of Ranks	Variable	Year	N	Mean Rank	Sum of Ranks
V42	2nd Year	79	57.01	4503.50	V51	2nd Year	79	58.23	4600.50
	3rd Year	28	45.52	1274.50		3rd Year	28	42.05	1177.50
	Total	107				Total	107		
V46	2nd Year	79	57.09	4510.00	V54	2nd Year	79	58.34	4609.00
	3rd Year	28	45.29	1268.00		3rd Year	27	39.33	1062.00
	Total	107				Total	106		
V49	2nd Year	79	58.67	4635.00					
	3rd Year	28	40.82	1143.00					

Appendix B

Appendix B.1. Questionnaire

Section A: Demographic Information

Question	Answer
1. Gender:	
2. Age:	
3. Year of Study:	
4. Were you raised in Athens?	□ Yes □ No

Section B: Perception (of Performance) Measurement

Question	From	To
5. The secretariat's facilities are adequate.		
6. The secretariat is equipped with modern technology.		
7. The secretariat staff maintain an appropriate appearance.		
8. The printed information provided by the secretariat is comprehensive.		
9. The printed information provided by the secretariat is clear and easy to understand.		
10. The electronic information provided by the secretariat is comprehensive.		
11. The electronic information provided by the secretariat is clear and easy to understand.		
12. The secretariat delivers its services to students on time.		
13. When I face a problem, the secretariat staff show interest in resolving it.		

Question	**From**	**To**
14. The secretariat provides its services correctly the first time.		
15. The secretariat staff provide immediate service.		
16. The secretariat staff are always willing to assist me.		
17. The secretariat staff respond promptly to students' requests.		
18. The secretariat staff inform me of the exact time of service delivery.		
19. The secretariat staff are polite.		
20. The secretariat staff have the necessary knowledge to provide reliable and accurate information to students.		
21. The secretariat staff are honest with me.		
22. Students in the Tourism Management department provide positive feedback about the secretariat.		
23. The secretariat has the necessary technological equipment to provide its services.		
24. The secretariat understands the needs of each student.		
25. The secretariat's working hours are convenient for the needs and schedules of students.		
26. Face-to-face (in-person) interaction with the secretariat is easy.		
27. Electronic communication (remote) with the secretariat is easy.		
28. Telephone communication (remote) with the secretariat is easy.		
29. In case of an issue on the secretariat's side timely notification is provided.		

Section C: Expectation (of Performance) Measurement

Question	**From**	**To**
30. An ideal secretariat should have adequate facilities.		
31. An ideal secretariat should be equipped with modern technology.		
32. The staff of an ideal secretariat should maintain an appropriate appearance.		
33. The printed information provided by an ideal secretariat should be comprehensive.		
34. The printed information provided by an ideal secretariat should be clear and easy to understand.		
35. The electronic information provided by an ideal secretariat should be comprehensive.		
36. The electronic information provided by an ideal secretariat should be clear and easy to understand.		
37. An ideal secretariat should deliver its services to students on time.		
38. When I face a problem, the staff of an ideal secretariat should show interest in resolving it.		
39. The services of an ideal secretariat should be provided correctly the first time.		
40. The staff of an ideal secretariat should provide immediate service.		
41. The staff of an ideal secretariat should always be willing to assist me.		
42. The staff of an ideal secretariat should respond promptly to students' requests.		
43. The staff of an ideal secretariat should inform me of the exact time of service delivery.		
44. The staff of an ideal secretariat should be polite.		
45. The staff of an ideal secretariat should have the necessary knowledge to provide reliable and accurate information to students.		
46. The staff of an ideal secretariat should be honest with me.		
47. The feedback from students about an ideal secretariat should be positive.		
48. An ideal secretariat should have the necessary technological equipment required to provide its services.		
49. An ideal secretariat should understand the needs of each student.		
50. The working hours of an ideal secretariat should be convenient for the needs and schedules of students.		
51. Face-to-face (in-person) interaction with an ideal secretariat should be easy.		

Question	From	To
52. Electronic communication (remote) with an ideal secretariat should be easy.		
53. Telephone communication (remote) with an ideal secretariat should be easy.		
54. In case of an issue on the ideal secretariat's side, timely notification should be provided.		

Section D1: Dimension Significance Measurement

#	Question	Points
55.	The completeness and adequacy of the secretariat's facilities, equipment, staff, and informational materials.	
56.	The secretariat's ability to provide services accurately and reliably.	
57.	The willingness of the secretariat staff to assist students and provide prompt service.	
58.	The knowledge and politeness of the secretariat staff, as well as their ability to inspire trust and honesty.	
59.	The interest and personalized attention that the secretariat provides to students.	
	Total Points:	100

Section D2: Dimension Significance Check

Question	#
60. Which of the above five dimensions is the most important to you?	
61. Which of the above five dimensions is the second most important to you?	
62. Which of the above five dimensions is the least important to you?	

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