

# On-campus accommodation service quality: the mediating role of students' satisfaction on word of mouth

On-campus  
accommodation  
service quality

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## Abstract

**Purpose** – Based on the main studies presented in the literature, this work aims to examine the level of student satisfaction towards the on-campus accommodation service provided by an Italian university. Notably, the objectives of the study are twofold: (1) to examine the mediating role of student satisfaction on the relationship between university on-campus accommodation service quality and word-of-mouth and (2) to determine whether there is any significant difference in students' satisfaction towards on-campus accommodation in terms of gender and the halls of residence.

**Design/methodology/approach** – The study is based on the results of a survey carried out through an online questionnaire by 381 students living on campus at the University of Urbino.

**Findings** – The findings revealed that the quality perceived by university students in relation to individual services had a positive impact on their general satisfaction towards the halls of residence experience.

**Research limitations/implications** – The study presents some limitations such as lack of temporal comparisons, a focus on specific service quality items and the fact that it refers to a single Italian university.

**Practical implications** – The findings of this study will help the management of public universities to improve the quality of services in their halls of residence for the satisfaction of their students.

**Originality/value** – To the authors' knowledge, there have been no previous studies about on-campus accommodation service quality conducted in Italy. The study contributes to enrich the service quality literature, confirming both that the sum of the quality of individual elements is not as the overall satisfaction and the outcome intention of positive WOM depends not only on service quality attributes, but also from an overall evaluation of satisfaction.

**Keywords** Service quality, Student satisfaction, On-campus accommodation service, WOM, Italy

**Paper type** Research paper

## 1. Introduction

Various names have been attributed to student accommodation, including student housing, dormitories, campus apartments, student hostels, halls of residence and student accommodation housing (Insch and Sun, 2013; Sawyerr and Yusof, 2013; Khozaei *et al.*, 2014). Regardless of the name used, student accommodation is described by Najib *et al.* (2011b) as a supervised living-learning hostel consisting of basic housing as well as learning facilities and amenities, and is administered to accommodate undergraduate and postgraduate students.

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Regardless of the type, [Sawyer and Yusof \(2013\)](#) stated that on-campus accommodation is important for meeting the psychological and physical needs of students. More so, [Insch and Sun \(2013\)](#) concluded that such accommodation provides a common ground for students to relate to and access facilities provided by their institution. [Najib \*et al.\* \(2011a, b\)](#) further pointed out that the provision of on-campus student housing is to cater for students' housing needs while they accomplish their academic, living and social goals during their period of study.

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Regardless of the name and type, students in on-campus accommodation are customers, while university management is the service provider. It is therefore the responsibility of university management to provide accommodation that will satisfy their students. [Najib \*et al.\* \(2011a, b\)](#) regarded student accommodation as an essential component of the facilities provided by the higher education institutions. Furthermore, [Park \(2006\)](#) opined that it is important to understand the expectation of students in terms of how they would like to live and which features of accommodation they regard as important for their housing satisfaction. This knowledge can be useful for future planning of student housing and also for the development of housing policies. Student demand for high-quality accommodation with the necessary features and amenities has been on the increase ([Sawyer and Yusof, 2013](#)). [Najib \*et al.\* \(2011a, b\)](#) noted that there has been a dearth of studies and literature on this subject due to researchers focusing mainly on post-occupancy research on either private or public residences. It has emerged that there is a need to investigate student housing facilities and students' level of satisfaction with various features, facilities and services.

This study intends to fill the gap in the body of knowledge on students' opinions and behaviours by assessing the University of Urbino's accommodation service in Italy because, to the best of the authors' knowledge, no previous studies have been conducted in Italy ([Prakash, 2018](#)). This study also extends to university management so that it can understand the vital role of accommodation on students' living experiences. Concerning the service quality topic, the study confirms something that in service quality literature was already known but that has not received enough attention. In particular, [Ryan \(1996\)](#) stated that the quality of the service is expressed on two levels that are the quality of specific elements and the quality of the global service as a whole, and as a consequence the overall impression the customer gets from of a service prevails on the quality judgement of the individual elements when it comes to determine the customer's satisfaction.

The aim of current study is to investigate the relationship between on-campus accommodation services and customer satisfaction, and more specifically:

- (1) To examine the mediating role of student satisfaction in the relationship between on-campus accommodation service quality and word-of-mouth (WOM);
- (2) To determine whether there is any significant difference in students' satisfaction with on-campus accommodation in terms of gender and halls of residence.

The study aims to answer the following research questions:

*RQ1.* Does students' satisfaction mediate the relationship between word-of-mouth and service quality in on-campus accommodation services?

*RQ2.* Is there a difference in students' satisfaction according to gender?

*RQ3.* Is there a difference in students' satisfaction between halls of residence?

As a matter of fact, the study is a kind of confirmatory paper as it confirms something that is already known literature but not so much. However, since it proves a counterintuitive result (the outcome intention of positive WOM depends not only on service quality attributes, but also from an overall evaluation of satisfaction), its contribution is original.

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The rest of this paper is structured as follows. [Section 2](#) describes the literature review on students' satisfaction and the hypotheses development. [Section 3](#) explains the research method used in this study, while [Section 4](#) presents and discusses the results. Finally, [Section 5](#) concludes the paper by providing theoretical and managerial implications and directions for future research.

## 2. Literature review

Several researchers have considered student accommodation to be among the most essential facilities provided by higher learning institutions. For instance, [Najib \*et al.\* \(2011a\)](#) noted that students' intellectual capabilities can be expanded through the facilitation of a good physical environment at their halls of residence. Moreover, it was observed by [Hassanain \(2008\)](#) that desirable educational outcomes and mutual interests (among students) can be fostered through suitably designed residential facilities. Thus, for achieving the goal of improving student performance, the contribution of sustainable campus housing facilities should not be underestimated.

[Abdullah \(2009\)](#) stated that organisations need to provide basic goods, facilities, amenities and services to the satisfaction of students so as to survive in the highly competitive accommodation provision market. The level of satisfaction is usually a function of expectation ([Najib \*et al.\*, 2011a, b](#); [Aigbavnoa, 2016](#)). This implies that when students are satisfied and their expectations are met, they are more likely to continue to stay in the same accommodation; however, when they are dissatisfied, they are more likely to move elsewhere. Students have other accommodation options, including off-campus and private residences. Management of higher education institutions should therefore focus on the factors that attract and retain students ([Aldridge and Rowley, 1998](#)). It is vital for institutions to care about student satisfaction towards the accommodation they provide to ensure that students enjoy their studies and life on campus.

Student life on campus is an important matter that should be given consideration. This is due to the fact that student life or activities outside the classroom are still the responsibility of the university and should be managed properly. Higher education institutions that provide accommodation for the majority of their students in on-campus residences will have a greater duty and responsibility to make sure that student welfare is taken care of. The features for consideration include safety, quality, size and cleanliness of the accommodation; quality of the furniture and fittings inside the room and in the surrounding areas; and good Internet connection ([Oke \*et al.\*, 2017](#)).

In the literature, some models have been developed to measure the level of consumer satisfaction for a service and, in turn, the quality of the service provided. Service quality is a multidimensional construct, and different models have been developed in the literature to measure it, as reported in [Table 1](#).

The SERVQUAL model ([Parasuraman \*et al.\*, 1985, 1988](#)) has been a popular instrument for measuring service quality associated with aspects of tertiary education (e.g. [Joseph and Joseph, 1997](#); [Tan and Kek, 2004](#)) as well as of accommodation (e.g. [Saleh and Ryan, 1991](#); [Getty and Getty, 2003](#); [Juwaheer and Ross, 2003](#)). The model is generally the most commonly used in empirical studies due to it being easy to understand and able to fit in with different types of services. Nevertheless, [Carman \(1990\)](#) and [Cronin and Taylor \(1994\)](#) called for modifications to SERVQUAL so that it could be tailored to different service settings.

Different studies have been conducted using the SERVQUAL model with regard to on-campus accommodation service quality, while others have followed the suggestion of [Cronin and Taylor \(1994\)](#) to tailor the service quality dimension to the context investigated. As a matter of fact, components of university halls of residence examined in different studies vary considerably. [Table 2](#) shows the main studies that have investigated the quality of

Authors (year)	Model	Dimensions
Grönroos (1984)	Service quality model	Technical quality, functional quality, corporate image
Philip and Hazlett (1997)	PCP model	Pivotal, core, peripheral attributes
Parasuraman <i>et al.</i> (1985)	GAP model	Reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding/knowing the customer, tangibles
Haywood-Farmer (1988)	Service quality attributes	Physical facilities, processes and procedures, people behaviour and conviviality, professional judgement
Parasuraman <i>et al.</i> (1988)	SERVQUAL	Tangibles, reliability, responsiveness, assurance, empathy
Cronin and Taylor (1992)	SERVPERF	Same as SERVQUAL but with performance only statement
Brady and Cronin (2001)	Service quality model	Personal interaction quality, physical service environment quality, outcome quality
Crompton and Duray (1985)	IPA model	A set of attributes pertaining to a particular service (or goods) are evaluated on the basis of how important each is to the customer, and how the service or goods is perceived to be performing relative to each attribute

**Table 1.**  
Main service quality models

**Source(s):** Authors' elaboration

on-campus accommodation services and reveals that although a few studies have adopted the SERVQUAL model, most have created *ad hoc* service quality dimensions. In addition, no empirical studies have been conducted in Italy (except for Petruzzellis *et al.*, 2006, which was a very marginal investigation of the accommodation topic); rather, they have mostly been concentrated in Malaysia and Africa. In this study, the SERVQUAL dimensions have been adopted from previous studies and modified to fit into the current study setting.

Shin *et al.* (2014) identified WOM, which applies when consumers are satisfied with the products or services they have consumed. However, an earlier study advocated that WOM communication can be negative, neutral or positive (Anderson, 1998), even if service managers seem more interested in encouraging positive WOM communication (Hutchinson *et al.*, 2009). As a matter of fact, WOM may not have the conscious objective of influencing someone, but it is clear that comments shared with other people inevitably influence them, both positively and negatively. WOM represents an activity that customers carry out that helps to increase or decrease brand reputation and therefore the brand value of a person, organisation or entire country.

Weidemann and Anderson (1985) referred to recommendation as a behavioural dimension whereby satisfied individuals have the intention of recommending a place to others. Authors have argued that this recommendation behaviour is more effective than using advertising to publicise products and services (Ozaki, 2003; Song and Yan, 2006; Zamzuri *et al.*, 2008; Gu *et al.*, 2012; Zeithaml *et al.*, 2018). Similarly, Parasuraman *et al.* (1985), Stauss and Neuhaus (1997) and Pizam and Ellis (1999) stressed that when a customer has a good experience with a product or service (e.g. housing facilities), they will feel encouraged to promote to or share their satisfaction with the people they know (Ryan, 1996).

From a student's point of view, WOM is considered to be one of the effective information during the prospective students' decision-making process (Le *et al.*, 2019). WOM provides an excellent alternative as an important source of information (Duan *et al.*, 2008), and it is an influential source that helps students in the decision-making process more than any marketing activities as a source of information (Duan *et al.*, 2008; Breazeale, 2009).

Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Petruzzielis, D'Uggenito, Romanazzi	2006	<i>Managing Service Quality</i>	Student satisfaction and quality of service in Italian universities	Italy	Lecture halls, laboratories, equipment, library, refectories, accommodation, leisure, language courses, scholarship, educational offer, Internet access, exam booking, contacts with teachers, administrative service, tutoring, counseling, internship, international relationship, placement Academic aspects of the college, social aspects of the college (includes on-campus housing)
Sirgy, Grzeskowiak, Rahtz	2006	<i>Social Indicators Research</i>	Quality of college life (qcl) of students: developing and validating a measure of well-being		
Hassanain	2008	<i>Journal of Facilities Management</i>	On the performance evaluation of sustainable student housing facilities	Saudi Arabia	Functional performance, technical performance
Amole	2009	<i>Journal of Environmental Psychology</i>	Residential satisfaction in students' housing	Nigeria	Objective physical variables: the morphological configuration of the hall, number of persons in the bedroom, presence or absence of reading room, common room, kitchenette and a balcony (terrace at the back of the bedroom) Subjective variables: attitudes about comfort, bedroom furnishing, number of persons in the bedroom, number of persons on the floor, privacy in bedroom, the sanitary facilities, number of persons using the sanitary facilities, the kitchenette in general, design of the hall, number of persons in the hall, location of the hall, the design and location of the hall, the kitchenette and sanitary facilities, the reading and relaxation facilities, the floor level on which the respondent lived, the bedroom, the accesses, furnishing and storage in the bedroom, privacy, security, social densities and place qualities, rules and regulations, fees paid, maintenance of facilities and management staff Modified SERVQUAL: reliability, responsiveness, assurance, empathy, general amenities, room amenities
Radder and Han	2009	<i>International Business &amp; Economics Research Journal</i>	Service quality of on-campus student housing: a South African experience	South Africa	

(continued)

On-campus accommodation service quality

**Table 2.**  
Main studies on university on-campus accommodation service

Table 2.

Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Najib, Yusof, Osman	2011	<i>American J. of Engineering and Applied Sciences</i>	Measuring satisfaction with student housing facilities	Malaysia	Study-bedroom, washroom, pantry, leisure room, support services
Najib, Yusof, Abidin	2011	<i>Journal of Facilities Management</i>	Student residential satisfaction in research universities	Malaysia	Study-bedroom, washroom, pantry, common and recreation room, support services
Khozaei, Hassan, Razak	2011	<i>Journal of Building Appraisal</i>	Development and validation of the student accommodation preferences instrument (SAP)	Malaysia	Facility and amenity, visual, location, social contact, security, convenience
Adewunmi, Omirin, Famuyiwa, Farinloye	2011	<i>Facilities</i>	Post-occupancy evaluation of postgraduate hostel facilities	Nigeria	Functional performance, technical performance
Najib, Yusof, Osman	2011	<i>International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering</i>	The relationship between students' socio-economic backgrounds and student residential satisfaction	Malaysia	Study-bedroom, washroom, pantry, common and recreation room, support services,
Bashir, Sarki, Samidi	2012	<i>International Journal of Business and Social Science</i>	Students' perception on the service quality of Malaysian universities' hostel accommodation	Malaysia	SERVQUAL model
Mohammad, Gambo, Omirin	2012	<i>Journal of Emerging Trends in Economics and Management Sciences</i>	Assessing facilities management service in postgraduate hostel using SERVQUAL technique	University of Lagos, Nigeria	SERVQUAL model
Bondimba, Nimako, Karley	2013	<i>Urban Studies Research</i>	Developing student housing quality scale in higher institutions of learning: a factor analysis approach	Ghana	Development of the student housing quality scale (SHOQUAL): core facility quality, enabling facility quality, support facility quality, cost of housing

(continued)

Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Nimako, Bondimuba	2013a	<i>European Journal of Business and Social Sciences</i>	An empirical evaluation of student accommodation quality in higher education	Ghana	Core facility, enabling facility, supporting facility, cost
Sawyer and Yusuf	2013	<i>Journal of Facilities Management</i>	Student satisfaction with hostel facilities in Nigerian polytechnics	Nigeria	Bedroom, bathroom, common/recreation room, other services
Nimako and Bondimuba	2013a	<i>Current Research Journal of Social Sciences</i>	Relative importance of student accommodation quality in higher education	Ghana	Core facility, enabling facility, supporting facility, cost
Jain, Sahney, Sinha	2013	<i>The TQM Journal</i>	Developing a scale to measure students' perception of service quality in the Indian context	India	Academic facilities, non-academic processes, interaction, support facilities, input quality, industry interaction, curriculum
Muslim, Karim, Abdullah	2015	<i>Procedia - Social and Behavioral Sciences</i>	Satisfaction of students' living environment between on-campus and off-campus setting: A conceptual overview	Malaysia	Students' living condition, students' social activities, community facilities and services, neighbourhood physical surroundings, cost of living, students' preferences
Nabilou and Khani	2015	<i>Journal of Educational and Management Studies</i>	Quality of dormitory services in Urmia University of Medical Science: female student's perceptions	Iran	SERVQUAL model
Eke, Aigbavboa, Thwala	2015		Determination of satisfaction with university student residence: a report from South Africa	South Africa	Dwelling unit features, neighbourhood and environmental features, building quality features, services provided by management
Annamdevula and Bellamkonda	2016	<i>Journal of Modelling in Management</i>	Effect of student perceived service quality on student satisfaction, loyalty and motivation in Indian universities	India	Development of the HEduQual: teaching, administrative services, academic facilities, campus infrastructures (includes university has sports and recreation facilities, university has adequate hostel facilities, university has safety and security measures, university hostels provide quality food), support services, internationalisation

(continued)

On-campus accommodation service quality

Table 2.

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Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Mugambwa, Mugerwa, Mutumba, Muganzi, Namubiru, Waswa, Kayongo Poku, Braimah, Clegg	2016	<i>Sage Open</i>	Privately provided accommodation service quality and customer satisfaction: the case of Nsamizi Training Institute of Social Development	Uganda	modified SERVQUAL model: reliability, security and tangibles regarding provided accommodation
	2016	<i>Journal of Building Performance</i>	Comparative assessment of user-satisfaction with on-campus residential accommodation at Takoradi Technical University, Ghana	Ghana	Physical features, social amenities, management factors
Ning and Chen	2016	<i>Sustainability</i>	Improving residential satisfaction of university dormitories through post-occupancy evaluation in China: a socio-technical system approach	China	Social aspects, physical aspects
Ada, Baysal, Erkan	2017	<i>Universal Journal of Educational Research</i>	An evaluation of service quality in higher education: Marmara and Nigde Omer Halisdemir universities' Department of Education Students	Turkey	Institutional administrative direction, institutional academic direction, institutional image, accessibility, diploma programmes offered by institution, institutional physical facilities
Oke, Aigbavboa, Raphiri	2017	<i>Journal of Engineering, Design and Technology</i>	Students' satisfaction with hostel accommodations in higher education institutions	South Africa	Dwelling unit features and building quality features, neighbourhood and environmental features, services provided by the university management
Navarez	2017	<i>Research Congress 2017 De La Salle University, Manila, Philippines</i>	Student residential satisfaction in an on-campus housing facility	Manila	Students' living condition, students' social activities, community facilities and services, neighbourhood physical surroundings, cost of living, students' preferences

(continued)



Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Datta and Vardhan	2017	<i>Sage Open</i>	A SERVQUAL -based framework for assessing quality of international branch campuses in UAE; a management students' perspective	United Arab Emirates	SERVQUAL model
Azam	2018	<i>European Online Journal of Natural and Social Sciences</i>	Service quality dimensions and students' satisfaction: a study of Saudi Arabian private higher education institutions	Saudi Arabia	Academic service, administrative service, physical evidence
Khan, Yazdaniyar, Ekhlasi	2018	<i>International Journal of Educational Studies</i>	Important elements of private dormitory spaces	Iran	Intimatement, terrotory, privacy, incoming hierarchy, introspection
Gusta and Gusta	2019	<i>Engineering for Rural Development</i>	Problems of providing affordable high quality student housing in context of development of major Latvian universities	Latvia	Price, quality of a room, common areas, number of inhabitants in a room, location, proximity to public transport, service nearby, car parking, bike parking
Adilme	2019	<i>Global Journal of human-social science</i>	Assessment of student housing satisfaction among students of University of Lagos	Nigeria	Availability of on-campus housing, quality of the on-campus housing, privacy, security, hostel fees, proximity to school activities, availability of off-campus housing, response time to repairs and maintenance, electricity/power supply, water supply, Internet facility, privacy of the hostel, number of occupants in a room, cleanliness of the hostels, noise levels of the hostel, transport system from hostel to classrooms, fees paid for accommodation
Abdullah, Abidin, Basrah, Alias	2020	<i>Environment-Behaviour Proceedings Journal</i>	Conceptual framework of residential satisfaction		Socio-demographic characteristics, physical features of the house, housing support services, public facilities, neighbourhood facilities and social environment

(continued)

On-campus accommodation service quality

Table 2.

Table 2.

Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Rahman, Mia, Ahmed, Thongrak, Kiatpathomchai Simpeh, Shaikantu	2020	<i>Journal of Asian Finance, Economics and Business</i>	Assessing students' satisfaction in public universities in Bangladesh: an empirical study An on-campus university student accommodation model	Bangladesh  Ghana	Room capacity, food supply, utility service, online service, sewerage service, cultural programmes, hostel security, hostel communication service, prayer facility, library service, administrative service, guest room service Living related spaces, learning related spaces, support spaces, sport and leisure spaces, health and environment services, security and safety services maintenance services, learning related services, support services, sport and leisure services
Mulyono, Hadian, Purba, Pramono	2020	<i>Journal of Asian Finance, Economics and Business</i>	Effect of service quality towards student satisfaction and loyalty in higher education	Indonesia	Academic aspects, non-academic aspects, reputation, loyalty
Xu, Sunindjo and Mussi	2021	<i>Facilities</i>	Comparing user satisfaction of older and newer on-campus accommodation buildings in Australia	Australia	Technical dimension, functional dimension, behavioural dimension
Nhlabathi	2021	<i>Real Estate Management and Valuation</i>	Dimensions of students' satisfaction with residential housing and its impact on their loyalty – a South African study	South Africa	Bedroom, building quality, leisure facilities, support facilities
Dizai and Khanghahi	2022	<i>Journal of Asian Architecture and Building Engineering</i>	Students' residential preferences: a case study of dormitories of University of Mohaghegh Ardabili	Iran	Dimension, WC and welfare, location, privacy, vision, flexibility, materials
Dandis, Jarrad, Joudeh, Mukattash and Hassouneh	2022	<i>The TQM Journal</i>	The effect of multidimensional service quality on word-of-mouth in university on-campus healthcare centres	Jordania	Atmosphere, tangibles, interaction activity, relationship activity, process expertise, safety measure, reliability, operational activity, communication, WOM

(continued)

Authors	Year	Journal	Title	Context	Model of service quality analysis applied/Dimension investigated
Kanwar and Sanjeeva	2022	<i>Journal of Innovation and Entrepreneurship</i>	Student satisfaction survey: a key for quality improvement in the higher education institution	India	infrastructure facilities, student support and administrative matters
Cinkir, Yildiz, and Kurum	2022	<i>SAGE Open</i>	The effect of undergraduate students' perceived service quality on student commitment	Turkey	Academic services, administrative services, campus facilities,
Gbadegesin, Marais, Von Maltitz, Cloete, Lenka, Rani, Campbell, Denoon-Stevens, Venter, Koetaan and Pretorius	2022	<i>Journal of Student Affairs Research and Practice</i>	Student housing satisfaction at a South African university	South Africa	Physical design: aesthetics, colour, spatial layout, design of privacy, use of institutional branding, quality of bedrooms, room size, access to infrastructure, onsite parking, private bathroom, crowding, security. Psycho-social factors: privacy, the experience of home maintenance Service quality: role of apartment management including Environmental quality indicators: experience of safety, Internet access, transport, rules, access to a fitness center, cable TV, socialisation, mixed land-use, academic success

**Source(s):** Authors' elaboration

On-campus accommodation service quality

Table 2.

The study of [Najib \*et al.\* \(2011\)](#) revealed that satisfied students would recommend their student housing to friends, freshmen or relatives. This implies that positive experiences lead students to encourage other friends to reside with them, another way of enhancing socialisation and form strong social ties among seniors and juniors.

[Naik \*et al.\* \(2010\)](#) also highlighted that the antecedents of behavioural intentions such as service quality are mediated by customer satisfaction. [Hsu \(2018\)](#) indicated that there is a significant positive impact on the relationship between service value, satisfaction and the willingness to spread WOM. He also found that service encounters indirectly influence the targets of WOM in terms of service value and satisfaction. Moreover, numerous scholars have concluded that a significant relationship exists between service quality and WOM either directly ([Liu and Lee, 2016](#)) or indirectly through mediators such as customer satisfaction ([Mahmood and Grigoriou, 2017](#); [Hwang and Choi, 2019](#)). For example, [Rahayu \(2018\)](#) observed that service quality and customer satisfaction have a significant influence when developing positive WOM. [Mestrovi \(2017\)](#) concluded that good service quality has a direct and significant impact on student satisfaction, while student satisfaction has a direct and significant impact on WOM and service quality has an indirect and significant impact on WOM through student satisfaction. Consequently, this study intended to verify the following hypothesis:

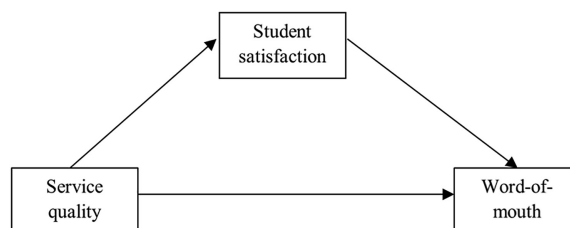
- H1.* Student satisfaction mediates the relationship between on-campus accommodation service quality and word-of-mouth.

The conceptual framework of this study hypothesis is reported in [Figure 1](#): in particular, it considers that on-campus accommodation service quality influences the student satisfaction and, in turn, students' overall satisfaction affects WOM.

One potential service quality analysis approach compares satisfaction scores across genders ([Parasuraman \*et al.\*, 1988](#)). Although investigating differences between genders might be critical for segmentation purposes, it has not been a popular research approach ([Babin and Boles, 1998](#)). Only a few such studies (e.g. [Burggraaf, 1997](#); [Joseph and Joseph, 1997](#); [Abouchedid and Nasser, 2002](#)) have investigated gender within an educational context.

[Li \*et al.\* \(2007\)](#) opined that the tendency to feel greater satisfaction with overall student housing experiences on campus is higher among female students. Likewise, [Meir \*et al.\* \(2007\)](#) found that male students care much about the privacy in their rooms. Elsewhere, [Foubert \*et al.\* \(1998\)](#) identified that there is a higher level of student residence satisfaction among male students who stayed in the co-educational housing, although female students reported an equal satisfaction level when they stayed either in co-educational or single-sex housing. As gender differences might influence expectations regarding accommodation ([Radder and Wang, 2006](#)), we propose the following statement:

- H2.* Significant differences in student satisfaction scores exist in terms of students' gender.



Source(s): Authors' elaboration

**Figure 1.**  
The conceptual framework

Ente Regionale per il Diritto allo Studio Universitario (ERDIS) provides services to students at universities in the Marche region of central Italy and is the on-campus accommodation provider at the University of Urbino.

ERDIS's corporate goal is to remove the economic and social limitations that hinder equal opportunity access to university studies. It ultimately aims to allow those without sufficient means to reach, if they wish, the highest levels of education and culture in a wide range of fields as long as they are capable and deserving. It provides a number of services to students, including financial aid, food service, accommodation, psychological support, medical services and disability services. Some of these are granted only to a limited number of students (subject to an annual competition notice) on the basis of defined income and merit requirements, while others are provided to the entire university student community. Among the services offered, those most used by students are the food service and the accommodation service.

In terms of accommodation, the University of Urbino has seven buildings incorporating a total of 1,364 beds. These are the Campus Scientifico, Acquilone, Serpentine, Colle, Internazionale, Tridente and Vela, which are located in different parts of the city. Campus Scientifico, for example, is surrounded by greenery about 4 km from the academic activities university campus, while Internazionale, the newest renovated structure, is in the historic city centre, close to where educational activities are carried out. Acquilone, Vela, Serpentine, Tridente and Colle are located about 2 km from the centre and the academic activities there, and they comprise buildings with the greatest presence of students, where young people have more opportunities for socialising. These accommodation facilities differ based on the services they offer, such as laundry and dryer service, food service and room features. In addition, they differ in terms of the type of the students living there: there are generally short-term students at Internazionale, while long-term students stay at Colle, Tridente and Vela. As a consequence, this study also aimed to investigate the following hypothesis:

*H3.* Significant differences in student satisfaction exist in terms of the halls of residence.

### 3. Research method and design

#### 3.1 Sample and questionnaire design

The present study aims to answer the research questions by means of empirical analysis. A self-administered questionnaire was developed to measure respondents' perception of the quality attributes offered by an on-campus accommodation service. The items on it were adopted from previous studies and modified to fit the current study setting (Radder and Han, 2009; Oladiran, 2013).

Notably, a preliminary qualitative analysis was conducted using the interview method in order to identify the quality factors of the service. The interviews involved the general director and area manager of ERDIS. The on-campus accommodation attributes investigated are shown in Table 3.

The questionnaire consisted of three sections: (1) 15 items on satisfaction with specific on-campus accommodation attributes, (2) 1 items of overall satisfaction and a suggestion for improving on-campus accommodation services and (3) socio-demographic information. Except for the socio-demographic information, all questions were measured using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

The structured questionnaire was administered online to a sample of young Italians living in on-campus halls of residence (about 1,360 students) aged between 18 and 35 years old. It was distributed via computer-assisted web interviewing (CAWI) in March 2019. A total of 381 young people attending Urbino University completed the questionnaire voluntarily.

On-campus accommodation attribute	Referred literature
Ease to access	Hassanain (2008), Khozaei <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020)
Hygiene services	Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022)
Laundry service	Hassanain (2008), Amole (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Ning and Chen (2016), Oke <i>et al.</i> (2017), Simpeh and Shakantu (2020), Dizaj and Khanghahi (2022)
Internet connection	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022)
Maintenance intervention	Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022), Gbadegesin <i>et al.</i> (2022)
Common study rooms	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020)
Room comfort	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022)
Room noise	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022), Gbadegesin <i>et al.</i> (2022)

**Table 3.**  
On-campus  
accommodation  
attributes investigated

(continued)

On-campus accommodation attribute	Referred literature
Room temperature	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022)
Perceived security	Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022), Gbadegesin <i>et al.</i> (2022)
Value for money	Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Gusta and Gusta (2019), Adilieme (2019)
Courtesy and availability of the staff	Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Jain <i>et al.</i> (2012), Muslim <i>et al.</i> (2015), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020)
Respect of the no-smoking rule	Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Nimako and Bondinuba (2013b), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020)
Cleaning of common areas	Hassanain (2008), Amole (2009), Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022), Gbadegesin <i>et al.</i> (2022)
Cleaning of the room	Radder and Han (2009), Najib <i>et al.</i> (2011), Khozaei <i>et al.</i> (2011), Najib <i>et al.</i> (2011b), Khozaei <i>et al.</i> (2011), Adewunmi <i>et al.</i> (2011), Najib <i>et al.</i> (2011c), Bashir <i>et al.</i> (2012), Bondinuba <i>et al.</i> (2013), Nimako and Bondinuba (2013a, b), Sawyerr and Yusof (2013), Annamdevula and Bellamkonda (2016), Mugambwa <i>et al.</i> (2016), Poku <i>et al.</i> (2020), Ning and Chen (2016), Oke <i>et al.</i> (2017), Abidin <i>et al.</i> (2019), Gusta and Gusta (2019), Adilieme (2019), Rahman <i>et al.</i> (2020), Simpeh and Shakantu (2020), Xu <i>et al.</i> (2020), Dizaj and Khanghahi (2022), Dandis <i>et al.</i> (2022), Gbadegesin <i>et al.</i> (2022)

Source(s): Authors' elaboration

Table 3.

Brasini and colleagues' (2002) formula [1] was applied to find that the number of questionnaires that had to be administered to produce statistically significant results was 300:

$$n = \frac{Z^2 a / 2N}{4(N-1)\theta^2 + Z^2 a / 2} = \frac{1.96^2 \times 1360}{4(1360-1) \times 0.05^2 + 1.96^2} = 299.72 = 300, \quad (1)$$

where:

n = sample size,

$Z^2 a / 2$  = confidence level (1.96, computed using the tables of the standard normal distribution),

N = population size,

$\theta$  = margin of error (set at 5%).

Therefore, our sample can be considered statistically significant, at least at the time of data collection.

### 3.2 Data analysis

The data were processed using Statistical Package for Social Sciences (SPSS) version 25.0 for Windows and AMOS version 23. A structural equalisation model was implemented to evaluate the mediating effect of student satisfaction on the relationship between the service quality dimensions and the WOM intention. An independent *t*-test was then performed to statistically test the equality of means and to analyse differences in on-campus accommodation service quality perception between gender. Finally, one-way analysis of variance (ANOVA) was used to test any mean difference in student's satisfaction level with regard to the university halls of residence. Differences and associations were considered significant at  $p < 0.05$ .

## 4. Results and discussion

Statistics described the respondents' sociodemographic features in percentages. During the process of data screening for outliers, there was no data set to delete due to Mahalanobis (D2) values that were not more than the  $\chi^2$  value ( $\chi^2 = 20.176$ ;  $n = 381$ ,  $p < 0.005$ ). Tests of normality were performed to satisfy the criterion of multivariate normality, namely skewness and kurtosis. An absolute value of skewness greater than 3.0 or of kurtosis greater than 8.0 may indicate an abnormal distribution (Chen, 2012). As a consequence, non-normality was not an issue in this study.

Table 4 summarises the sociodemographic characteristics of the sample. Most of respondents were female with a scholarship.

Characteristic		Percentage
Gender	Male	40
	Female	60
Scholarship	Yes	92
	No	8

Source(s): Authors' elaboration

**Table 4.** Sociodemographic characteristics of the sample



Table 5 shows that the most important attributes of student satisfaction were the courtesy and availability of the staff (mean = 3.44) followed by the common study rooms (mean = 3.40) and the comfort and temperature of rooms (mean = 3.04 and 3.29, respectively). In general, overall student satisfaction was more than positive, with a mean of 3.27. Most items had a mean score of greater than 2.5, indicating that most respondents had a positive experience of on-campus accommodation.

This result is interesting as students are satisfied with the service even if the evaluation of its individual component is not so good, confirming what Ryan (1996) stated.

EFA with varimax rotation was employed to analyse the 15 items. Of these, 12 items explained the 54% of variance, with a Kaiser–Meyer–Olkin measure of 0.915 and a Bartlett’s test of sphericity of 0.000. The items with rotated factor loading higher than 0.5 were selected, and the factor analysis identified three dimensions (with eigenvalue higher than 1), labelled general amenities of common spaces, room amenities and studying conditions (Table 6).

Item	Mean	Std. Deviation
Ease to access	3.07	1.074
Hygiene services	2.72	1.191
Laundry service	2.38	1.041
Internet connection	2.78	1.224
Maintenance intervention	2.64	1.204
Common study rooms	3.40	0.935
Room comfort	3.04	1.075
Room noise	2.64	1.234
Room temperature	3.29	1.294
Perceived security	2.99	1.148
Value for money	2.87	0.836
Courtesy and availability of the staff	3.44	1.135
Respect of the no-smoking rule	3.18	1.368
Cleaning of common areas	2.76	1.179
Cleaning of the room	2.87	1.215
<i>Overall satisfaction</i>	3.27	0.951

Source(s): Authors’ elaboration

Table 5. Descriptive statistics

Item	General amenities of common spaces $\alpha = 0.806$ mean = 2.8	Room amenities $\alpha = 0.752$ mean = 3	Studying conditions $\alpha = 0.516$ mean = 2.9
Cleanliness of common spaces	0.758		
Maintenance intervention	0.720		
Laundry service	0.713		
Hygiene service	0.623		
Common study rooms	0.532		
Value for money	0.509		
Ease to access		0.837	
Cleanliness of the room		0.753	
Room comfort		0.620	
Room temperature			0.798
Room noise			0.585
Internet connection			0.572

Source(s): Authors’ elaboration

Table 6. Results of exploratory factor analysis

General amenities of common spaces and room amenities both demonstrated excellent reliability, as denoted by their Cronbach's  $\alpha$  values. Studying conditions had a Cronbach's  $\alpha$  value of >0.6, which in any case is considered adequate for exploratory studies in the social sciences (Hair *et al.*, 2010). The overall reliability was 0.851.

It emerged that room amenities (mean 3) were most appreciated by the university students, followed by the studying conditions (mean 2.90) and the general amenities of common spaces (mean 2.8). However, it should be pointed out that the degree of satisfaction towards these three quality dimensions was positive but not particularly exciting, being equal to or less than 3 on the Likert scale, even if the students are satisfied with the service (mean 3.27).

Before implementing the model of this study, a goodness-of-fit test was administered to the model, the result of which can be seen in Table 7. There were different criteria used to test the model, namely the goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), Tucker–Lewis index (TLI), comparative fit index (CFI), normed fit index (NFI), incremental fit index (IFI) and root mean square error of approximation (RMSEA). All the eight criteria fulfilled the fit criteria cut-off. Based on the result of all criteria used in the goodness-of-fit test, it can be concluded that the SEM model used in this study was appropriate.

In order to investigate the mediating role of student satisfaction between WOM and the service quality dimension, a mediation analysis was performed. Notably, the outcome for analysis was WOM intention; the predictor variables for the analysis were the service quality dimensions; and the mediator variable was the student satisfaction. The significance and relevance of the structural model relationships were assessed using the bootstrapping routine. The results of the estimation are presented in Table 8.

Before analysing the structural relationships, we checked the values of the inner variance inflation factor (VIF) and assessed that they were below the threshold of 3. Therefore, we confirmed the absence of collinearity and thus proceeded with the analysis of the structural model relationships. From the results of the hypothesis testing (Table 8), service quality had significant and positive influence on student satisfaction ( $\beta = 0.998, p < 0.001$ ), which positively influenced WOM intention ( $\beta = 0.479, p < 0.001$ ). In particular, general common-

**Table 7.**  
Goodness of fit test results

Goodness of fit index	Cut-off	Results
GFI	$\geq 0.90$	0.955
AGFI	$\geq 0.90$	0.928
TLI	$\geq 0.90$	0.940
RFI	$\geq 0.90$	0.902
CFI	$\geq 0.90$	0.955
NFI	$\geq 0.90$	0.927
IFI	$\geq 0.90$	0.956
RMSEA	0.05–0.08	0.061

**Source(s):** Authors' elaboration

**Table 8.**  
Structural model results

Effect	Path	S.E.	<i>p</i> -value
Service quality - > student satisfaction	0.998	0.044	0.000
Student satisfaction - > word of mouth	0.479	0.065	0.000
Service quality - > word of mouth	0.821	0.060	0.000

**Source(s):** Authors' elaboration

space amenities, room amenities and studying conditions had a positive and significant influence on student satisfaction ( $p < 0.001$ ). Also, the items that significantly influenced the students' satisfaction were ease to access, cleanliness and comfort of rooms, temperature of the rooms, hygiene services and the common study rooms.

These results are in line with previous literature that revealed a positive relationship between students' satisfaction and the quality of university housing facilities (Amole, 2011; Najib *et al.*, 2011a, b; Mogenet and Rioux, 2014). Moreover, the service quality dimension was positively related to WOM ( $\beta = 0.821, p < 0.001$ ). Satisfied students would recommend their student housing, and this implies that positive experiences lead students to encourage their friends to reside with them (Najib *et al.*, 2011). The intention of positive WOM depends not only on service quality attributes, but also, from an overall evaluation of satisfaction, is an aspect already known in service quality literature but has not received enough attention (Brunetti, 1999).

The most surprising aspect of these results is that although the level of perceived quality was not particularly high on the Likert scale, the degree of overall customer satisfaction was higher. All in all, the evaluation of a service is not simply a matter of adding the quality of its individual elements but, on the contrary, the overall perception of satisfaction counts.

This suggests that student satisfaction is perceived and assessed holistically by combining the complex of quality dimensions associated with individual services. Thus, there are synergistic factors of the services received that are interdependent and able to enhance customer satisfaction. Paradoxically, a student can be satisfied with a service even if the evaluation of its individual components are not so good (Ryan, 1996).

Concerning the effect of the relationship between service quality and WOM, the indirect effect was found to be statistically significant (effect = 0.48, 95% CI,  $p < 0.001$ ). This means that there is a significant relationship between service quality and WOM, and also indirectly through customer satisfaction as mediator (Mahmood and Grigoriou, 2017; Mestrovic, 2017; Hwang and Choi, 2019). In addition, student satisfaction is a partial mediator of the relationship, as the  $p$ -value of the direct effect is statistically significant (Table 9). Therefore, H1 was supported.

An independent sample  $t$ -test was conducted to test the differences in satisfaction scores between genders. The test showed no statistically significant difference between males and females in terms of on-campus accommodation service appreciation (Table 10). However, there was a significance difference (Sig. < 0.10) concerning the comfort of the room, the room temperature and the Internet connection. Therefore, H2 was partially supported. Radder and Han (2009) also found no differences between males and females in terms of their views on on-campus service quality, although other studies have revealed differences in campus accommodation preferences (Amole, 2011; Adebayo and Amole, 2019). However, in this study, females have been evaluated on each dimension of on-campus accommodation services to be better (Li *et al.*, 2007), except for the general amenities of common spaces. As a

Relationship	Direct effect	Indirect effect	Total effect	Confidence interval		P-value	Type of mediation
				Low	High		
Service quality - > student satisfaction - > word-of-mouth	0.3414	0.4797	0.8211	0.3466	0.6196	<0.001	Partial mediation

**Note(s):** Bootstrap sample = 5,000 with replacement

**Source(s):** Authors' elaboration

**Table 9.** Test for mediation using bootstrap analysis with a 95% confidence interval

matter of fact, this dimension includes attributes such as hygiene services, laundry service, cleaning of common spaces, maintenance intervention where females were less satisfied than males, so females were more demanding than males. In addition, females were slightly less satisfied than males in general.

Going more deeply into the evaluation of on-campus accommodation services, the students were asked to grade the service quality dimension proposed and specify the hall of residence that they had referred to (Table 11). The ANOVA was conducted to statistically compare the student's satisfaction scores between on-campus halls of residence. This analysis showed some differences between halls of residence. The *F*-test pointed out statistically significant differences concerning general common-space amenities, room amenities, studying conditions and overall satisfaction. Therefore, H3 was supported. However, there was no significant difference concerning room temperature, cleaning of common areas and laundry service ( $p > 0.05$ ). As a matter of fact, all halls of residence received positive scores from students: the Internazionale hall of residence received the highest scores for all service quality dimensions (overall satisfaction mean = 5) followed by the Campus Scientifico (overall satisfaction mean = 3.50) and the Acquilone hall of residence (overall satisfaction mean = 3.41).

Deepening the students' appreciation of each hall of residence, the results showed that the least satisfied students in the case of each category were those living in the Vela hall of residence (mean = 2.64), while the most satisfied lived in Internazionale. This could be explained because the Internazionale hall of residence is the only one located in the centre of Urbino, and the score of Vela could be due to the fact that students are far from the centre and that transport could be difficult even by bus, due to their inconvenient times.

The students were not particularly satisfied with the cleanliness of the rooms, especially in the Vela (mean = 2.36) and Colle hall of residence (mean = 2.67). However, they were completely satisfied at Internazionale (mean = 5). Overall, room comfort was appreciated. Concerning room noise, the least satisfied students were those living in the Tridente and Vela halls of residence (mean 2.41 and 2.64, respectively). This could be due to the lack of sound isolation in the rooms. Regarding the temperature of the rooms, students were generally satisfied (mean 3.29).

Value for money was generally appreciated, especially at Internazionale and Campus Scientifico, and so were their hygiene services. The students were slightly less satisfied with the Internet connections in the halls of residence; this could be due to the fact that some areas did not have Wi-Fi coverage. However, the respondents were satisfied with the study rooms in all the halls of residence (mean = 3.40), and, in general, they were satisfied with the on-campus accommodation service.

Dimension	Male		Female		Independent <i>t</i> -test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>Sig</i>
General amenities of common spaces	2.77	0.84	2.74	0.83	0.154	0.744
Room amenities	2.89	0.92	3.04	0.91	0.040	0.148
Studying conditions	2.89	0.92	2.90	0.89	0.020	0.869
Overall satisfaction	3.32	0.97	3.19	0.93	0.876	0.240

**Table 10.**  
Differences in student satisfaction scores between genders

**Note(s):** \* The mean difference is significant at the 0.05 level

**Note(s):** M = mean, SD = standard deviation, *t* = *t*-value

**Source(s):** Authors' elaboration

Dimension	Campus scientifico		Acquilone/ Serpentine		Colle		Internazionale		Tridente		Vela		ANOVA	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F	Sig
General amenities of common spaces	3.18	0.79	2.92	0.85	2.73	0.81	4.14	0.40	2.59	0.78	2.82	0.85	4.56	0.000*
Room amenities	3.36	0.81	3.07	0.86	2.88	0.82	4.56	0.50	3.04	0.97	2.65	0.86	4.48	0.001*
Studying conditions	3.10	0.98	3.00	0.88	3.18	0.89	4.40	0.53	2.75	0.87	2.85	0.85	3.72	0.003*
Overall satisfaction	3.50	0.86	3.41	0.87	3.20	1.03	5.00	0.00	3.19	0.93	3.09	1.06	3.500	0.004*

**Note(s):** \* The mean difference is significant at the 0.05 level

M = mean, SD = standard deviation

**Source(s):** Authors' elaboration

On-campus  
accommodation  
service quality

**Table 11.**  
Comparison of the  
student satisfaction  
scores between on-  
campus halls of  
residence

## 5. Conclusion

Customers' increasing power has led to the development of models to interpret their perceptions and, therefore, their degree of satisfaction. Companies can derive numerous advantages by acting with a view to satisfying their customers by setting themselves the goal of improving functions designed to protect and satisfy the needs of the community to create a real relationship of trust with users.

When students leave home to attend university, most of them have to keep their expenses to a minimum, and halls of residence are very helpful for achieving this goal. However, the issue of costs and economic savings has led to a minimalist view of the design of halls of residence (e.g. interior divisions, form, building materials and furniture), which is why most did not qualitatively meet the needs of students.

Based on the literature review, it is possible to identify multidimensional factors that influence user satisfaction with on-campus accommodation. Because of the importance of halls of residence, researchers have studied their effect on students (LaNasa *et al.*, 2007; Cross *et al.*, 2009). Therefore, it is necessary to investigate students' housing preferences in order to better understand their actual demands and requirements (Khozaei *et al.*, 2011). If service providers are aware of students' accommodation preferences, they will be able to enhance the quality of living in student halls of residence. Ignoring these priorities and differences can also cause irreparable damage to the quality of education.

The aim of this paper was to investigate students' satisfaction with on-campus accommodation services, and we investigated those provided by ERDIS at the University of Urbino. We administered a semi-structured questionnaire to students living in on-campus accommodation and asked them to evaluate the accommodation service.

From a theoretical point of view, this study presents significant contributions. First of all, it introduces the effect of multidimensional service quality on WOM in an Italian university. The study outlined general satisfaction with the on-campus accommodation services offered to students at the University of Urbino, particularly in terms of room amenities and studying conditions. Notably, it emerged that service quality dimensions have a positive and significant influence on students' satisfaction and on WOM. In addition, it was found that student satisfaction partially mediates the relationship between service quality and WOM, confirming the proposed H1 and the results of previous studies (Naik *et al.*, 2010; Najib *et al.*, 2011; Mahmood and Grigoriou, 2017; Mestrovic, 2017; Hsu, 2018; Hwang and Choi, 2019).

H2 was partially confirmed, as there was no significant difference between gender and the level of student satisfaction. This result contributes to the debate concerning the role of gender in the appreciation of some attributes of the on-campus accommodation service as even in the literature there are conflicting results: in the work of Radder and Han (2009) there was no statistically significant differences in the gap scores between males and females in the service quality dimension, while other studies (Adebayo and Amole, 2019; Amole, 2011; Meir *et al.*, 2007; Li *et al.*, 2007) have revealed differences in campus accommodation preferences. However, in this study, females evaluated each dimension of on-campus accommodation service to be better (Li *et al.*, 2007), except for the general amenities of common spaces where, for some individual attributes, females were more demanding than males. Females were generally slightly less satisfied than males, too. This could be due to the fact that, between genders, the weighted importance of some attributes is more relevant than others.

Another important aspect in line with previous studies (Nabilou and Khani, 2015) is that there was a significant difference in all dimensions of student satisfaction for the on-campus halls of residence, confirming H3.

As a matter of fact, all halls of residence received positive scores from students.

Deepening the students' appreciation of each hall of residence, the results showed that the least satisfied students were those living in the Colle, Tridente, Vela and Campus Scientifico hall of residence, while the most satisfied lived in Internazionale. The first motivation could be

explained by the ease of reach to the city centre: the Internazionale hall of residence is the only one located in the centre of Urbino, while the others are far from the centre and the transport could be difficult even by bus, due to their inconvenient times. Figure 2 shows the map of the hall of residences of the University of Urbino.

Other attributes that differ significantly between hall of residences are the features of building and of the rooms. Appendix shows the images of some hall of residence and of the rooms. The Colle, Vela, Acquilone/Serpentine and Tridente were all designed by the same architect Giancarlo De Carlo between 1960s and 1980s and organized as a city-campus. The residences are located on a hill, about one kilometre from the historic centre of Urbino. The complex is all set on terraces that descend from the hill towards the valley. The various buildings are connected by stairs, ramps and avenues parallel to the level curves. However, Internazionale is a historical building in the centre of Urbino, renewed recently in the outside and in the interior spaces. The rooms have a higher quality furniture and recently replaced.

Thus, this work contributes to the debate on on-campus accommodation service quality by providing insight in an Italian context.

Second, the study confirms empirically some literature statements (Ryan, 1996, 1997; Brunetti, 1999): the sum of the judgements of the individual aspects of the service is not the same as the overall impression, as the students' satisfaction was positive but was not the same for some service quality attributes. In addition, the study provides a sort of a



Source(s): Authors' elaboration

Figure 2. Map of the hall of residences of the University of Urbino

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counterintuitive result: the outcome intention of positive WOM depends not only on service quality attributes, but also on an overall evaluation of satisfaction.

The study also provides some managerial implications useful for service providers as a result of the content analysis of the open-ended answer given by students. In this way, the significance of this study is in giving ERDIS administrators the insights they need to improve their readiness and capabilities by providing them with a comprehensive understanding of the needs of their students, which will ultimately improve the reputation and image of their respective institutions.

If satisfaction is linked to a city centre location, this may imply that living in halls of residence far from the city centre generates less satisfaction, and therefore it could be useful to intervene by providing transport services by way of free shuttles scheduled frequently. It could be useful to provide more washing machines and dryers and organise their usage through a booking system (maybe through a mobile app). In this way, students would be able to wash their clothes without having to queue. Another relevant aspect could be strengthening the Internet connection so that it reaches all students' rooms and study rooms, while the opening hours of study rooms could be extended until late.

Concerning room amenities, the service provider could modernise the furniture in some rooms with more comfortable and fashionable items and provide rooms with mini fridges. For example, since the Internazionale was the newest, and therefore more comfortable, this could suggest also performing maintenance on other on-campus halls of residence in order improve their quality (e.g. noise, comfort and hygiene services).

The results of the study reveal that, in general, the students' satisfaction was good, even if some service quality attributes were not extremely positive.

This is in line with what Ryan (1996) stated: the overall evaluation of a service is not simply a matter of adding the quality to its individual elements (quality of specific attributes) but, on the contrary, the overall perception of satisfaction counts (quality of the global service as a whole).

In order to improve the quality of these attributes, it could be useful to map processes to identify those that create dissatisfaction (service blueprint). These results could help institutions identify the factors contributing to service quality, so that they can discreetly provide better services that enhance student satisfaction.

The competitive environment of universities means that they pay attention not only to teaching quality, which is, together with research and scientific output, the core of the offer, but also to the design of innovative solutions in the field of peripheral services, among them on-campus accommodation services (Pencarelli *et al.*, 2013). This context can be analysed using the development of the service offering model, which is attributable not only to one service but also in a corporate view. On-campus accommodation can be interpreted as an essential service in a basic package that is differentiable from other universities through ancillary services such as organised events, general amenities and meetings. From a corporate-level point of view, the basic service package includes core services such as teaching, education and scientific research, while on-campus accommodation would be an ancillary service with the task of enriching the university offer and distinguishing it from its rivals.

Adopting the value perspective, defined as the difference between benefits and sacrifices perceived by the customer under a long-term relationship with the supplier in which everyone involved takes on a dual role of user and producer of value, students also create value for the university by monitoring and evaluating services. This encourages the continuous process of quality improvement by the service provider. In addition, students create value for the university by providing positive WOM, which has a strong impact on the image of a university (Pencarelli *et al.*, 2013). Hence, the results of this study will help institutions to understand the importance of quality in terms of their services and the relationship between students' perceived quality of service, satisfaction and WOM.



As with any study, this study too has limitations. First of all, the analysis refers to the structures of a single Italian university. Furthermore, the data examined do not allow for temporal comparisons to be made in order to capture trends in perceptions of the quality of services and customer satisfaction. Finally, our work focuses on some specific elements of service quality. For these reasons, the study opens up some possible lines for future research, such as a comparative analysis at an international level, a longitudinal study on the evolution of perceptions of quality and customer satisfaction over time, as well as an expansion of the items of quality taken into account, such as room size, building aesthetics, social areas and activities, availability of sport, leisure facilities and the investigation of the weight of importance that each service quality attribute can have on student satisfaction.

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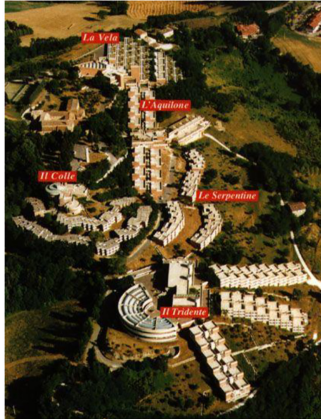
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View of the Giancarlo De Carlo buildings



Internazionale hall of residence



Colle hall of residence



Tridente hall of residence



**Figure A1.**  
Images of the Urbino  
university hall of  
residence

(continued)

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TQM

Acquilone/serpentine hall of residence



Vela hall of residence



Figure A1

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## DICHIARAZIONE SOSTITUTIVA DELL'ATTO DI NOTORIETA'

(art. 47 D.P.R. n. 445/2000)

La sottoscritta Linda Gabbianelli, coautrice insieme a Tonino Pencarelli, della pubblicazione dal titolo "On-campus accommodation service quality: the mediating role of students' satisfaction on word of mouth" accettata per la pubblicazione nel 2022 sul The TQM Journal (*FASCIA A ANVUR*), ISSN 1754-2731, consapevole delle sanzioni penali richiamate dall'art.76 del D.P.R. 28.12.2000, n.445 per le ipotesi di falsità in atti e dichiarazioni mendaci,

dichiara

che, pur essendo tale pubblicazione il risultato di un lavoro comune, in sede di stesura finale i paragrafi da attribuire a:

- Tonino Pencarelli sono: Introduction, Conclusions;
- Linda Gabbianelli sono: Literature review, Research method and design, Results and discussion.

Urbino, 3 Novembre 2022

La dichiarante



Ai sensi dell'art. 3, D.P.R. 445 del 2 dicembre 2000, la dichiarazione è sottoscritta dall'interessata e inviata insieme alla fotocopia, non autenticata, di un documento di identità della dichiarante.

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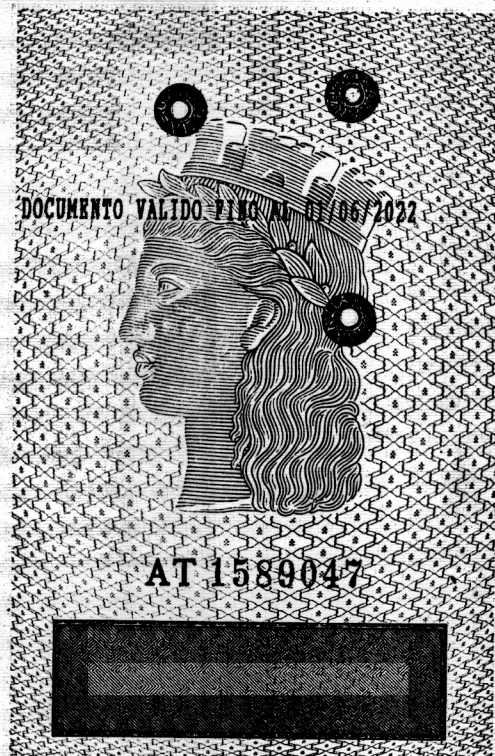




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