

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Hospitality, Leisure, Sport & Tourism Education

journal homepage: www.elsevier.com/locate/jhlste

Financial literacy in tourism and management & business administration entry-level students: A comparative view

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ARTICLE INFO

Keywords:

University students
Tourism degree
Financial literacy
Financial interest
Financial self-efficacy

ABSTRACT

Financial competences are essential in the tourism industry and consequently are valued in hiring and promotion decisions. However, according to the literature, tourism graduates appear to have inadequate levels of financial skills. The perceived lack of required competences results in a competitive disadvantage for tourism graduates in favour of those who studied Management & Business Administration, or equivalent degrees. To explain this gap, some authors point to the scarcity of finance-related courses within the curriculum of most of tourism or hospitality programs, but it is also suggested that the characteristics of the students enrolling in tourism and hospitality degrees could play a relevant role, highlighting that those students lack the required background knowledge and attitudes resulting in major constraints for financial competences development.

Our study compares the levels of financial literacy, financial self-efficacy, numeracy, and financial interest of entry-level students enrolled in these two competing university degrees, Tourism and Management & Business Administration. Our results indicate significant differences in both variables that in addition to the scarcity of finance subjects in the tourism curriculum could affect the students' prospects and employability.

1. Introduction

Tourism is a subject discipline that could be approached from an enormous variety of different perspectives (Fidgeon, 2010), resulting in curricular differences and varied disciplinary approaches to tourism between and within countries (e.g. Leung, Wen, & Jiang, 2018). Becton and Graetz (2001) highlighted that the disparate nature of the tourism and hospitality industry presents extraordinary challenges to educators. Most of tourism university programmes were developed in the context of a vocational approach (Leung et al., 2018; Zopiatis, Lambertides, Savva, & Theocharous, 2019) being later challenged to incorporate a broader set of competences to equip students with the abilities to perform managerial duties (Alexander, Lynch, & Murray, 2009)

In order to adapt the Tourism university degrees to the European Higher Education Area, the Spanish agency of accreditation (ANECA) commissioned a White Paper for the University Tourism Degree (ANECA, 2004). This report, with the objective of providing relevant information to guide the design of the new tourism degrees, mapped the tourism professional profiles, essentially coincidental with the sectors in which traditionally hospitality and tourism education has been divided in other countries (e.g. Millar, Mao, & Moreo, 2010), identifying a list of seven main areas and analysing their relevance in terms of job insertion for tourism graduates (pp.

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<https://doi.org/10.1016/j.jhlste.2023.100474>

Received 23 February 2023; Received in revised form 29 October 2023; Accepted 29 November 2023

Available online 7 December 2023

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78, 91).

1. Hospitality, including not only hotels, but also rural accommodation, camping, touristic apartments, etc. Represents 39% in terms of job insertion, standing hotels for 97% of this sector.
2. Food and beverage, including management of restaurants, catering, etc. Represents a 6% in terms of job insertion.
3. Intermediation, tour operators, travel agencies, reservation centres, general self-agents. Represents 24% in terms of job insertion, mainly travel agencies (95%).
4. Transport and logistics, airline companies, maritime transport, railway companies, etc. Represents 9% in terms of job insertion, mainly in airline companies.
5. Destination planning and public management includes all those institutions, generally of a public nature, which, through various instruments, are responsible for defining a destiny tourism at the local, regional, regional and national level and to establish the bases for its management, planning, and promotion. Represents the 8% in terms of job insertion.
6. Tourism products and activities, often referred to as complementary offer, include firms and institutions such as museums, thematic parks, conference and convention organising companies, recreational complexes, etc. Represents 11% in terms of job insertion.
7. Training, research and consultancy incorporate the needs of teachers for the various levels, whether for vocational training, University, and for, increasingly important, continuous training, as well as the needs of professionals to participate in projects to support companies and institutions, and to obtain data of tourism and its future prospects. This is just 3% in terms of job insertion.

Within each of these areas the ANECA considered four large blocks, or types of professionals.

- Corporate and institutional management
- Operations Management
- Intermediate positions
- Basic staff

According with the White Paper, the main professional reference for future graduates in tourism are those included in intermediate positions and operation management, without discarding the promotion to the upper management positions with additional training or academic formation (e.g. a Master degree). Basic staff or low-level intermediate positions, in which the vocation – practice oriented training is essential, are to be covered with staff who studied vocational training programmes (which are much more specialised in nature, practically oriented, and focused to specific sectors), being just an entry point to the industry for university graduates.

Consequently, the focus of a tourism university degree should be to prepare the students to perform managerial duties at a medium level in tourism firms, with a special focus on those sectors that are more relevant in terms of employment and career opportunities for tourism graduates, *Hospitality*, and *Intermediation* in the case of Spain. Thus, although tourism education always presented a strong vocational focus in the curricula (Zehrer & Mössenlechner, 2009), it cannot remain rooted in the day-to-day operational practice (Airey, 2005), needing a shift to a more balanced and comprehensive approach (Alexander et al., 2009; Leung et al., 2018), and put more attention on management competences in order to maintain the relevance of the degree to the industry (Wang, Ayres, & Huyton, 2010). In this line, in Spain, the most common university degree offered in the area is a generalist tourism degree with a relatively strong emphasis in business administration. A minority of universities (usually small private institutions) add the term *management* or specify the term *hospitality* or *hotel* in the name of the degree without further implications in terms of curriculum design. In our case, University of Seville, the relevance of management-related content is highlighted in the degree accreditation report, as well as in all the information provided to prospective students, in which it is indicated that one of the main professional opportunities for future tourism graduates is middle and senior management positions in companies in the tourism sector.

1.1. Relevance of financial competences

Financial competences are extremely relevant in the tourism sector; especially in the hospitality industry (Griffin, 2020; Yang, 2014), where those competences are present in almost every aspect of hotel and restaurant operations across all positions (Birdir & Pearson, 1998; Xie, 2018). Perhaps, as Zwaal and Otting (2013) suggest, the capital-intensive nature of this industry demands from managers at all levels to possess adequate financial skills; yet it is not the only one, being considered extremely relevant in other subsectors such as the gaming industry (Repetti & Jung, 2014). The existing literature supports the idea of accounting and finance as critical components of the curriculum (Hein & Riegel, 2011) providing empirical evidence of such relevance.

Tourism industry professionals surveyed by Wang et al. (2010) ranked Accounting, Finance, & Economics, as core study area in tourism courses, the second most important, only after Marketing. Industry professionals interviewed by Millar et al. (2010) noted that financial skills are an important tool for students' future career. In fact, finance skills, and revenue management, are the technical skills most cited by the industry professionals. Hein and Riegel (2011) surveyed a sample of industry professionals representing a variety of industry segments, professional positions, years of experience, and educational backgrounds, a review of their aggregate results indicate that industry professionals considered financial management knowledge as *essential* (mean 4.28 over 5) to the long-term success of graduates. All individual financial management content areas (a total of ten) received average scores greater than 4, without statistically significant differences by industry segment, the position of the respondents in the industry (senior management, operations management, or support services) or years of industry experience. Similar results were obtained by Suh, West, and Shin (2012), hospitality managers in their study scored the perceived importance of finance with 6.31 over a maximum of 7.

The review of the evidence presented by Griffin (2020) and Gursoy, Rahman, and Swanger (2012) suggests that the perceived relevance of financial competences by tourism professionals has been increasing substantially over time, an idea expressed previously by Watson (2008). Gursoy et al. (2012) presented a series of ranking of topic areas according to the importance for professional success as perceived by hospitality professionals in two different surveys made in 2004 and 2009. Finance is ranked in the number 13 out of 33 (average rate: 3.70) in the 2009 survey, increasing substantially the relative position obtained in the 2004 ranking (20th position, average rate of 3.66). Griffin (2020) used the same list of subject areas to study the opinions of both professionals and academics. In Griffin's study, Finance is ranked number 4 out of 33 by professionals, receiving an average score of 4.19 over 5, rising 16 positions since 2004.

This relevance results in a huge demand for managers with developed financial skills (Burgess, 2007; Xie, 2018); skills that are highly valued by employers (Green & Weaver, 2008) and not only for large firms. Renfors, Veliverronena, and Grinfelde (2020) note that business and management skills (including explicitly financial management) are necessary skills for professionals working in the context of small business in tourism.

Furthermore, the results by Kay and Moncarz (2007) not only provided evidence on the relevance of financial management competences for professional success in the industry but also showed that this relevance is higher as the level of the job position increases, suggesting that financial competences are a key requisite for further career success, a proposal also supported by Chung (2000) and Hein and Riegel (2011).

1.2. Perceived gap and possible causes

The demand for managers with developed financial skills has not resulted in better career prospects for tourism graduates. Instead of recruiting entry-level managers who have graduated from tourism or hospitality programs, employees are being sought among business administration graduates due to a perceived lack of required competences (Gibson, 2004), placing tourism and hospitality programmes 'at an inferior position compared to general business degrees offered at the same business school, leading to a detrimental knock-on effect in terms of perception of quality and reputation, student recruitment and graduate employability' (Zopiatis et al., 2019, p. 64). The perception of such an educational gap between what educational institutions offer as management-level tourism education and the needs and requirements as expressed by the tourism industry (Zehrer & Mössenlechner, 2009) is also a constant throughout the literature. Wang et al. (2010) highlighted this gap by asking tourism educators and managers if 'the curriculum of an undergraduate tourism degree is relevant to the tourism industry needs'. Although 78.4% of the educators indicated yes, only 52% of the managers agreed. When asked if a 'tourism degree is beneficial for managing tourism business', 86.5% of educators answered yes, while only 56.5% of managers agreed (with 15% answering no). The studies that investigated which need were not adequately covered found consistently educational gaps in managerial competences. Foster, McCabe, and Dewhurst (2010) surveyed tourism professionals covering all subsectors of the industry. Their results indicate current deficiencies in areas related to marketing, customer services and financial skills. Nolan, Conway, Farrell, and Monks (2010) indicated that both employers and graduates identified a number of gaps in the development of key competencies through the tourism educational experience, including financial skills. Wang and Tsai (2014) reported that *cost and financial management* is one of the competencies that requires the most improvement. Students surveyed by Luka and Donina (2012) self-evaluate their knowledge in finance as the lowest (just followed in the last positions of the list by economics), a low assessment in which the employers questioned in their study also agreed when evaluating the demonstrated competencies of tourism graduates. Agut and Grau (2002) reported *economic-financial management* as the knowledge area with the biggest perceived gap in knowledge (average importance score: 4.35 versus average level score: 3.03) and later (Agut, Grau, & Peiro, 2003) with the highest present training demand.

To explain the causes of such gap, and subsequent preference for professionals with a different background, several authors (Goh & Scerri, 2016; Zopiatis et al., 2019) point to the scarcity of finance-related courses within the curriculum of most of tourism or hospitality programmes, in which accounting and finance contents are covered in two or -maximum- three compulsory subjects.¹ Other results point to the, sometimes, considerable discrepancies between the respective views of industry professionals and tourism faculty on the relative relevance of content areas (Wang et al., 2010). Griffin's (2020) results show that the relative importance given to the 18 hospitality management content areas, as defined by the Accreditation Commission for Programs in Hospitality Administration, by industry professionals and faculty varied substantially. In the case of financial management, professionals ranked the area third, while faculty ranked it lower (6th position). Similar results were reported by Wang et al. (2010): Accounting Finance & Economics was rated second in importance by Tourism Industry professionals, while falling to the 6th position for academics, and in the current curricula.

However, Zopiatis et al. (2019) also suggest that the characteristics of the students enrolling in tourism and hospitality degrees also play a relevant role, highlighting that those students lack the required background knowledge and tend to ignore the business-related contents, especially finance & accounting (Gursoy & Swanger, 2005), preferring service-oriented and vocational contents and giving a lower ranking to subjects related with the area of economics and finance (Luka & Donina, 2012; Suh et al., 2012). Furthermore, finance courses are perceived by tourism students as more difficult and less interesting compared to the rest of business-related content (Zwaal & Otting, 2013).

Therefore, it seems that some of the causes of the lack of financial competence among tourism and hospitality students are the

¹ Leung et al. (2018), when comparing the curricula of 36 programmes from UK, Australia, and USA, found that on average 19% of courses of USA tourism programmes were focused on accounting, finance, cost control, and revenue management, while this percentage fell to only 10% in the UK and less than 8% in Australia.

characteristics they bring with them when they enrol in the degree, previous financial knowledge (financial literacy-FL) and other cognitive factors (e.g. numeracy) or motivational-emotional factors (intrinsic interest and self-efficacy) that could affect the development of such competences.

1.3. Objectives and structure of the paper

The main objective of this paper is to compare the levels of financial literacy and a series of potentially relevant variables (numeracy, financial self-efficacy and financial interest) of entry-level students enrolled in a tourism degree in comparison with their fellow colleagues enrolled in the management & business administration (BMA) degree which are, according to Gibson (2004), the two main groups competing for managerial positions in tourism related firms.

Although there exist a solid body of knowledge on the influence of FL on individuals and households, the published studies focused on more specific subpopulations (e.g., employees at firms) are considerably scarcer (García-Pérez-de-Lema, Ruiz-Palomo, & Diéguez-Soto, 2021) and almost inexistent for tourism students. Therefore, this paper contributes to the very scarce literature by offering an enhanced understanding of the characteristics that could affect financial competences development in university tourism students.

The rest of the paper is structured as follows: Section 2 presents a brief literature review focused on the concepts of financial literacy and financial interest. Section 3 develops the methodology: sample, context, measures and procedure. Section 4 presents the results and the paper concludes with a discussion of these results, implications for practice, limitations and suggestions for further research.

2. Literature review and development of research questions

2.1. Financial literacy

Financial literacy (FL) is defined by the OECD (2017) as 'knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life' (p.24). The extreme relevance of FL for any individual is highlighted in many studies, reports, and institutional statements, being its development a public policy objective in most countries (Huston, 2010), which systematically monitor the level of FL level through nationwide surveys (e.g., Atkinson & Messy, 2012; OECD, 2017). The main intertwined reasons for such relevance are summarized by Erner, Goedde-Menke, and Oberste (2016) and Lusardi (2019): (I) individuals are now more responsible for their personal finances than ever before, including retirement and health plans; (II) the complexity of financial decisions faced by average consumers and the frequency with which they make significant decisions is increasing, and (III) the exponential growth and adoption of technology to access a wider array of financial products and choices is changing, facilitating the access, but making the decisions more complex. These trends mean that individuals will be required to face autonomous financial decisions (Oehler & Kohlert, 2009) that affect them in the long term and, in either case, to choose from a wide variety of difficult-to-understand alternatives (Garg & Singh, 2018) with an increasingly technological component (Lusardi, 2019).

The increasing complexity and uncertainty of the environment makes FL of special relevance for young people (Sanz-de-Galdeano et al., 2020) who will soon form a significant part of the foundation upon which global economic environments will be built (Rosacker & Rosacker, 2016).

The tremendous relevance of FL to the general population (Lusardi, 2019) has led to a body of knowledge on the influence of FL on individuals and households that is well documented in the literature, while the amount of work focused on more specific subpopulations (e.g., employees at firms) is substantially scarcer (García-Pérez-de-Lema et al., 2021). However, if FL is important for the average citizen, it is even more relevant for those who aim to get to managerial positions in a firm because their level of FL would impact on their opportunities to develop and demonstrate skills that are considered essential in job selection and career progression in their future (Xie, 2018).

The extreme relevance of financial competences for tourism graduates has been evidenced in the literature. For instance, Burgess (2007) and Xie (2018) highlight that there exists a huge demand for managers with developed financial skills in the tourism sector and that financial competences are highly valued by employers (Green & Weaver, 2008) not only at entry-level positions but that this importance increases as the level of the job position is higher, linking financial competence with promotion and career success (Chung, 2000; Kay & Moncarz, 2007). However, some characteristics of students enrolling in tourism and hospitality degrees, among them previous knowledge -FL-play a relevant role as constraints in the development of financial competences (Zopiatis et al., 2019).

2.2. Factors affecting financial literacy and financial competences development

Regarding relevant variables that could be associated with the FL levels and development, several studies link FL with mathematics education (e.g. Erner et al., 2016). Skagerlund, Lind, Strömbäck, Tinghög, and Västfjäll (2018) found that the most determining factor in the development of FL is the ability to perform adequately with numbers (*numeracy*). Furthermore, numerical performance can influence vocational interests (Eidlin et al., 2021) predicting future enrolment in studies that are perceived as math-intensive, (Lee, Lawson, & McHale, 2015; Wang, Degol, & Ye, 2015), such as finance courses. According to the aforementioned studies, the lack of numeracy could have a twofold effect, hindering the development of financial skills and also preventing students from enrolling in courses that could help them develop such competences.

But not only cognitive factors, e.g. numeracy, are relevant; motivational–emotional factors can also influence these choices (Wang & Degol, 2013). For example, Dekhtyar, Weber, Helgertz, and Herlitz (2018) found that the influence of numeracy on educational choices was mediated by the degree to which students were interested in the subject, pointing to the concept of intrinsic interest, in our case, financial interest.

Hermansson and Jonsson (2021) defined *financial interest* (FI) as the ‘motivational state where the individual is interested in economic issues and financial markets’ (p. 2) This individual interest means that an individual considers a topic interesting *per se* and enjoys looking for more information and learning about it (Schiefele, 1991) connecting FI with intrinsic motivation, a key factor in educational settings, given that this interest has a strong influence in predisposition to learn and actively participate in learning activities as well as in the persistence and, lastly, in the success of educational activities (Cokley, 2000; Firat, Kilinç & Yüzer, 2018). FI, according to the results by Hermansson and Jonsson (2021) are significantly and positively connected to FL. Although no previous studies have focused on FI in tourism students; Zwaal and Otting (2013) highlight that these students often express that finance and accounting are not in the list of their favourite subjects suggesting a low interest in the content area.

Self-efficacy, as Arquero, Fernández-Polvillo, Hassall, and Joyce (2023) note, is one of the strongest predictors of future behaviour. Perceived self-efficacy could be defined (Bandura, 1994) as the levels of confidence individuals have in their ability to execute courses of action or attain specific performance outcomes. Hassall, Arquero, Joyce, and Gonzalez (2013) suggested that self-efficacy perceptions influence task selection and the effort devoted to the completion of a certain learning activity: Individuals will attempt tasks for which they have high self-efficacy and avoid those where they present low self-efficacy perceptions. Consequently, low levels of perceived self-efficacy in a certain domain could become a major constraint to educational development in that area. The results by Arellano, Cámara, and Tuesta (2014) evidence that general self-efficacy affects financial literacy, impacting the way individuals process information and on decision-making. Specific financial self-efficacy (FSE) appeared to be associated with financial literacy (Allgood & Walstad, 2016) or financial behaviour (Griguiou et al., 2015).

The association gender-FL is well documented in the literature. The meta-analysis by De Oliveira et al. (2019) reports a systematic association of gender with lower levels of FL. Bannier y Neubert (2016) found differences not only in real FL, but also in perceived FL and risk tolerance. Erner et al. (2016) concluded that being male is associated with an average increase of 7% in FL scores (for both basic and advanced measures) even when controlling for other relevant factors (Almenberg & Dreber, 2015). In Spain, the results by Mancebón and Ximénez de Embún (2020) reveal similar patterns of differences. Hermansson and Jonsson (2021) also report significant connections between gender and financial interest, presenting males higher levels of FI. Regarding financial self-efficacy, the recent review by Furrebøe and Nyhus (2022) highlighted that most revised studies reported that women had lower FSE levels than males. Furthermore, there is evidence of differences in maths self-efficacy by gender, presenting males higher levels of maths self-efficacy, although no differences were found in actual maths performance (Louis & Mistele, 2012).

2.3. Research questions

The main objective of the paper was stated as follows: to compare the levels of financial literacy and interest of entry-level students enrolled in a university tourism degree in comparison with their fellow colleagues enrolled in the Management & Business Administration (BMA) degree which could be considered the two main groups competing for managerial positions in tourism related firms. Consequently, the first research question is.

RQ1 Do the students enrolled in the BMA and Tourism degrees present different FL levels?

As was evidenced by the literature reviewed above, several cognitive and non-cognitive factors appear to be associated with FL levels and the development of financial competences. These links led us to pose the following research questions.

RQ2 Do the students enrolled in the BMA and Tourism degrees have different financial self-efficacy levels?

RQ3 Do the students enrolled in the BMA and Tourism degrees present different financial interest levels?

RQ4 Do the students enrolled in the BMA and Tourism degrees exhibit different numeracy levels?

Gender appears to be connected to differences in some of the studied variables (e.g. numeracy, financial literacy, financial interest and financial self-efficacy). Traditionally, the proportion of students differ between the two studied degrees, being the proportion of female students constantly higher in the tourism degree. The first four research questions are to be studied considering students as a group (that is, with the typical distribution by gender). A complementary research question is.

RQ5 Are the differences present when controlling for gender?

3. Methodology

3.1. Sample

The sample is composed of a total of 293 entry level students, 192 enrolled in the Business Management and Administration degree and 102 in the Tourism degree, both at the University of Sevilla (Spain). The distribution by gender is shown in Table 1. The percentage of female students in the tourism group is substantially higher (61% vs. 39%) than in the business administration degree, in which

traditionally male students are more numerous (58% male vs. 42% female). These distributions are similar to those typically presented for the total number of students enrolled in these degrees. The data provided by the university in the available statistical yearbooks² (courses 2018-19, 2019-20, 2020-21) indicate a constant distribution for both degrees: 35% male - 65% female in the case of tourism and 55% male - 45% female for BMA degree.

3.2. Measures and administration procedure

The initial section of the questionnaire gathered some personal information: age, gender and a measure of general financial knowledge self-assessment (FSE). FSE is measured using a single item, as it is also done in the Spanish survey of financial competences (Bover, Hospido, & Villanueva, 2018). This item asks students to rate their general knowledge concerning financial matters in a five-point Likert-type scale, ranging from 1: *very low* to 5: *very high*, being 3: *average*. Following Romero-Frías, Arquero, and del Barrio-García (2020) it is reasonable to use single-item measures when the construct to be measured is simple and the reduction of response costs (mainly time) could result in greater survey efficiency through higher response rates and questionnaire completion (Bergkvist & Rossiter, 2007; Drolet & Morrison, 2001; Sarstedt & Wilczynski, 2009). The review by Furrebøe and Nyhus (2022) highlight that the use of single-item measures for financial self-efficacy is not unusual in the literature, being the studies of Atlas, Lu, Micu, and Porto (2019) and Zhu and Chou (2018) recent examples. This section also included a question about previous performance in maths subjects (numeracy), asking for the level of grades obtained in these subjects in secondary education. This question allowed 3 levels: average, that is just passing the subjects (5–6 points over a maximum of 10), high, for those passing the subjects with grades ranging from 7 to 8 over 10 and very high, if the grades were between 9 and 10.

The FL measure is based on the questions used in the OECD INFE pilot study (Atkinson & Messy, 2012) which includes eight items to measure financial knowledge that have been widely used in institutional FL surveys. However, not all countries in the OECD study used the same questions; some of them were reworded or changed to be adapted to their specific populations. Analogously, two of the items typically used for the general population (division and loan with zero interest) were considered too simple for the specific population of our study (university students) adding no discriminant power. Consequently, these items were substituted by more adequate ones (all items are presented in the appendix). The FL score is obtained by adding the number of correct answers. In these calculations, following the OECD (2016) criterion, erroneous answers, the 'don't know' option, as well as not responding (blanks) were all considered incorrect answers.

Financial interest was measured by using five items developed *ad hoc* (shown in the appendix) that adapt the definition of the concept to the target population. The items asked students to rate their level of agreement with a set of statements (e.g I like to read news about companies and financial and market issues) that denote an active interest in economic issues and financial markets beyond course requirements. These items are to be responded in a five-point Likert scale, ranging from 1: *total disagreement* to 5: *total agreement*, being 3 a neutral point. The scale presented adequate internal consistence for this sample (Cronbach's alpha: 0.828).

The instrument was distributed in class at the first two weeks of the course by a member of the research team who provided explanations aimed at reducing the impact of the common-method variance -CMV- and response apprehension (Chang, Van Witteloostuijn, & Eden, 2010; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003): it was highlighted that the participation was voluntary, the data obtained were to be treated in strict confidence, only for research purposes in aggregate form, and that their participation will have no impact on their grades. Also, to reduce CMV, the items have different response types: true-false, alternative closed options, etc.

3.3. Statistical procedure

SPSS has been used to perform the tests. Univariate analyses of means differences between groups have been tested by using *t*-test. Multivariate analyses of differences (group x gender) have been tested by using multiple analysis of variance. Parametric tests have been chosen given that are easily understood by any average reader and, according to Blanca, Alarcón, Arnau, Bono, and Bendayan (2017), tests based on the F-statistic are extremely robust to violations of the normality assumption. Blanca, Alarcón, Arnau, Bono, and Bendayan (2018) also provide evidence that F is robust to variance heterogeneity if the variance ratio is below 1.5 with unequal samples, with much larger variance ratios allowed if the sample size discrepancy is not high. Equivalent non-parametric tests (e.g. Mann-Whitney) were calculated yielding no noticeable discrepancies with the parametric tests reported. When the range of the variable is limited to two, or three alternatives (e.g. numeracy of correct/incorrect), Chi square tests were calculated and reported.

4. Results

The first research questions focused on the differences by degree in financial literacy, financial interest, and self-efficacy scores. The results in Table 2 show that there are significant differences in FL score (RQ1). Tourism students, on average, correctly answer less than 4 questions over a total of 8, that is, 48% of correct answers, while BMA students, on average, reach 58% of success rate.

Regarding financial self-efficacy scores (RQ2), the results show significant differences, again being the lower scores associated with tourism students. It should be noted that in this case the differences are small, and for both subgroups, the level is below 3, the 'average' point of the scale. Therefore, FSE can be considered relatively low for both groups, given that the average scores are

² This information is available in the university site at: <https://www.us.es/laUS/la-us-en-cifras/anuario-estadistico>.

Table 1
Distribution of the sample by gender.

		Tourism	BMA	Sample
Male	Count	40	110	150
	% within degree	39%	58%	51%
Female	Count	62	80	142
	% within degree	61%	42%	49%
Other	Count	0	1	1
	% within degree	0	0.5%	0.3%
Total	Count	102	191	293

Table 2
Financial literacy, self-efficacy and interest scores by degree.

	Degree	Mean	SD	t-test sig
Fin. Literacy (Range: 0–8)	Tourism	3.84	1.64	0.000
	BMA	4.65	1.52	
Fin. Self-Efficacy (Range: 1–5)	Tourism	2.54	0.69	0.012
	BMA	2.75	0.63	
Fin. Interest (Range: 1–5)	Tourism	2.87	0.95	0.000
	BMA	3.27	0.89	

Note: The significance presented is for the 2 tailed t-test.

significantly below 3 (t-test sig: 0.000 for both subgroups).

Focusing on financial interest (RQ3), tourism students present significantly lower interest in finance matters than their fellow BMA students (2.87 vs 3.27, over a maximum of 5, being 3 the neutral point); that is, on average, tourism students disagree when asked if they have interest on financial matters (although the level of disagreement is not enough to be statistically significant, t-test against 3), while BMA group present a moderate positive interest (in this case, significantly higher than the neutral point; t-test sig: .000). Fig. 1 presents the comparative distribution of FI where it can be observed that 40% of tourism students present a score below the neutral point vs 19% of BMA students and only 29% present a positive interest vs 41% of BMA students.

Therefore, the results shown above give a positive answer to the stated research questions. There are significant differences between the group of students enrolled in the tourism degree in comparison with their fellow students enrolled in BMA degree in financial literacy (RQ1), financial self-efficacy (RQ2) and financial interest (RQ3). In all three variables is the BMA group the one that obtains higher scores.

Regarding FL, a detailed analysis of the answers to the individual FL questions (Table 3) could provide interesting information.

Noticeable differences are found in the case dealing with inflation (only 52% of tourism students, vs 80% of BMA answered correctly; 33% of the tourism students indicated that you could have more acquisitive power after a year with positive inflation) and in the cross effect of inflation and interest on a saving account item, in which only 51% of the tourism students were able to interpret that the cumulative effect of a 2% of inflation and a 1% of positive interest results in a loss of acquisitive power. Finally, the percentage of tourism students who understand the concept of risk diversification is very low (26%).

It should be noted that both groups obtained very low success rates in the two numeric questions dealing with interest, especially in the compound interest item.

The level of maths performance (numeracy) that students presented when accessing the university was measured by asking them about the previously demonstrated maths performance (secondary education grades); as any students should have passed these subjects, any grade that implies failing is not an option. The results, Table 4, show a significant and noticeable difference. The vast

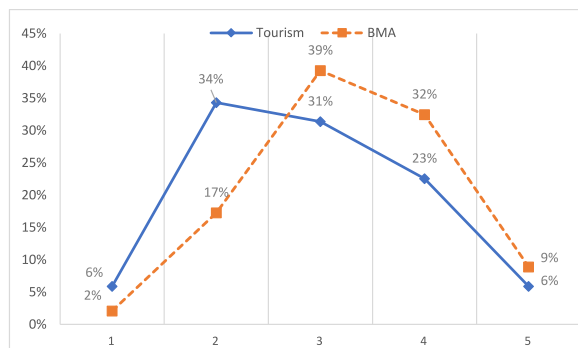


Fig. 1. Distribution of Fin. Interest score by degree.

Table 3
Correct answers by item and aggregated FL score.

Percentage of correct answers	TOUR	BMA	difference	Chi ² sig.
Inflation-applied	52%	80%	-28%	.000
Simple interest	38%	38%	0%	n.s.
Compound interest	31%	28%	3%	n.s.
Risk-return	78%	84%	-6%	n.s.
Inflation-concept	64%	61%	3%	n.s.
Diversification	26%	37%	-11%	.042
Inflation-interest	51%	82%	-31%	.000
Efective vs nominal interest	43%	57%	-14%	.016

Note: The Chi square significance reported is exact sig., one sided.

majority of tourism students (73.5%) just obtained the grade needed to pass the subjects and less than 4% reported to have obtained outstanding grades in maths subjects. On the contrary, BMA students mostly report high grades (48.7%), with close to 20% of them indicating outstanding grades. Consequently, the answer to RQ4 is also positive: there are differences in the level of numeracy when comparing entry-level students, being substantially higher for BMA students.

As was indicated above, traditionally, the proportion of students differ between the two studied degrees, being the proportion of female students usually higher in the tourism groups. These are the typical distributions for such degrees and, therefore, the results obtained when comparing groups, without weighting or controlling for gender, are of interest, for instance, for educators who must take into account the personal characteristics of such groups and deal with the limitations that could derive from them. However, as gender appears to be associated with differences in some of the studied variables (e.g. numeracy, financial literacy, financial interest and financial self-efficacy) questioning whether the differences found between groups are still present when controlling for gender is compulsory.

As could be seen in Table 5, the subgroup that obtains highest scores in FL are male students enrolled in BMA degree (mean: 5.1 correct answers over 8) and the lowest scores correspond to female students enrolled in the tourism degree (3.5 correct answers out of 8). Regardless of degree, male students obtain higher scores than their female fellow students, and with independence of gender, BMA outperforms tourism students. The results of the multiple analysis of variance test (MANOVA), shown in Table 5, Panel B, indicate that both variables (gender and degree) have a significant influence on FL score.

Regarding financial self-efficacy, the pattern of differences is fairly similar to the one presented for FL (Table 6). The highest FSE score is found for male BMA students (2.86) while the lowest is presented by female tourism students (2.48). In any case, all means are below 3, the average point of the scale. Again, both variables, gender and degree, seem to significantly affect FSE score.

Table 7 indicate that the highest level of financial interest is presented by male BMA students (3.45). The results of the tests indicate that both variables affect financial interest, however, within tourism degree group, there are no significant differences by gender (*t*-test n.s.).

5. Discussion, conclusion and implications

Baum (2002, p. 357) argued that the diversity of the tourism sector makes it difficult to support that “industry needs” could be represented by a single perspective, but he wondered if the same argument could hold true for management skills. And research has evidenced that competency in the area of financial management is essential for hospitality and tourism managers (Nolan et al., 2010) regardless the subsector of the industry, and that this relevance is increasing over time (Grigion Potrich, Mendes Vieira, & Mendes-Da-Silva, 2016). Tourism firms should, according to Kay and Moncarz (2007), recruit tourism & hospitality graduates with strong financial management competences curriculum for entry-level manager positions, so they could get promoted, as well as contribute to the firms’ objectives of profitability and growth. However, managers are sought among BMA graduates due to a lack of perceived financial competences (Gibson, 2004). Tourism students undervalue the relevance of financial competences for their future success (Suh et al., 2012) self-evaluate their finance knowledge as low (Luka & Donina, 2012), and lack confidence in their employability prospects (Wang & Tsai, 2014). This gap could be attributed to different causes, being one of the most cited the scarcity of finance-related courses within the curriculum of most of tourism or hospitality programs (Goh & Scerri, 2016; Zopiatis et al., 2019). Our results suggest that part of the problem is present at the beginning of the process, associate to the personal characteristics and

Table 4
Previous maths performance.

		Average	High	Very high
Tourism	Count	75	23	4
	% within degree	73.5%	22.5%	3.9%
BMA	Count	60	93	38
	% within degree	31.4%	48.7%	19.9%
n		135	116	42

Note: the distributions are statistically different, Chi²: 0.000.

Table 5
Differences in Financial Literacy by gender and degree.

Panel A		n	Mean	SD
Tourism	Male	40	4.38	1.60
	Female	62	3.5	1.59
BMA	Male	110	5.1	1.58
	Female	80	4.07	1.2
	Total	292	4.38	1.61
Panel B (MANOVA)		Degree	Gender	Model
F		12.04	30.28	25.37
sig. of F		0.001	0.000	0.000

Table 6
Differences in Financial Self-Efficacy by gender and degree.

Panel A		n	Mean	SD
Tourism	Male	40	2.65	0.66
	Female	61	2.48	0.70
BMA	Male	110	2.86	0.55
	Female	80	2.62	0.68
	Total	291	2.69	0.65
Panel B (MANOVA)		Degree	Gender	Model
F		5.08	8.21	8.01
sig. of F		0.025	0.004	0.000

Table 7
Differences in Financial Interest by gender and degree.

Panel A		N	Mean	SD
Tourism	Male	40	2.81	1.01
	Female	62	2.91	0.91
BMA	Male	110	3.45	0.86
	Female	80	3.04	0.90
	Total	292	3.13	0.93
Panel B (MANOVA)		Degree	Gender	Model
F		10.06	4.65	8.85
sig. of F		0.002	0.032	0.000

preferences of the students enrolling in tourism degrees.

The level of financial literacy appears to be significantly lower for the tourism students group. A further graphical analysis of FL, showing the comparative distribution of correct answers, is provided in Fig. 2. The most frequent FL score for tourism students is 3 correct answers (37.5% of success), and 50% of tourism students scored 3 or less, while the most frequent scores for BMA students are 4 (26%) followed by 5 and 6 (both 22%). These results are not acceptable for students that in a future could need to develop a career related with finance in the tourism sector, but even are not adequate for an average citizen. The OECD (2016, p. 19) sets 5 out of 7 (71%

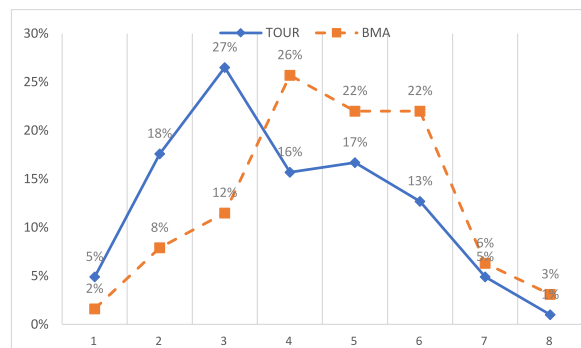


Fig. 2. Distribution of FL score by degree.

of correct answers) as minimum target score for a basic FL measure while Dahman-Para and Annaraud (2016) reported an average success rate of 64.4% for hospitality professionals. Only 36% of tourism students answered at least 5 items out of 8 correctly versus a 54% of BMA students, which is also less than could be expected.

Tourism students also present little interest in finance as area of knowledge (FI) confirming Zwaal and Otting (2013) suggestion. This lack of interest, that has been defined as a specific intrinsic motivation in finance, implies that (I) little motivation can be expected from tourism students to broaden their knowledge beyond what is strictly necessary to pass compulsory subjects, and (II) negative effect in academic performance in finance subjects could be expected (Zwaal & Otting, 2013). Although the level of FI of BMA students is not very high, consistently with their motivations being mainly extrinsic (Arquero & Fernández-Polvillo, 2019) it denotes certain positive interest.

Tourism students present also lower levels of previous maths performance and financial self-efficacy. Low levels of numeracy and self-efficacy could have the dual effect of hindering the development of financial skills and also preventing students from enrolling in courses that they feel are related to numbers or content for which they do not feel prepared to succeed academically.

As the distribution by gender in the two competing degrees is traditionally different, part of the dissimilarities found could be due to the gender proportion rather than associated with the degree choice. However, the results of the analyses performed controlling for gender indicate that, regardless gender, tourism students present lower levels of financial interest, financial self-efficacy, financial literacy and numeracy suggesting that part of the problem is a self-selection bias: students choose those degrees perceived to better fit with their characteristics (Arquero, Fernández-Polvillo, & Valladares-García, 2017), and in this case, they could be perceiving tourism as a degree (and professional career) in which numerical and finance subjects are less relevant.

Unfortunately, the structure of tourism and hospitality university programmes seems to confirm the perception by students. As Zopiatis et al. (2019) highlight, a review of premier international hospitality management programs confirms the scarcity of finance-related courses within the curriculum (usually one finance course in the core business requirements, often complemented by a related course or two, such as financial accounting or economics); a panorama that doesn't differ much in other cases (e.g. Spain, Espasandín, Díaz Fernandez, & Quirós Tomás, 2010; or UK and Australia, Leung et al., 2018).

As a main conclusion, the cumulative effect of lower levels of financial literacy, numeracy, financial interest, and financial self-efficacy of tourism students implies that their departing position is comparatively less favourable for effectively developing the financial skills sought by employers. The self-selection bias suggested by our results, in addition to the aforementioned characteristics, point to the futility of undertaking this development through electives, which will rarely be chosen by uninterested students. If the characteristics tourism students bring with them are concerning limitations to financial competences development and the possibilities they have decrease due to the relatively lower weight of finance & accounting compulsory subjects in tourism degrees, the result is a competitive disadvantage for tourism students when it comes to being employed, and specially being promoted to relevant positions, in tourism companies in favour of graduates that had better opportunities and interest to develop the required financial competences.

5.1. Implications-recommendations

As part of the problem is a self-selection bias (students choose those degrees perceived to better fit with their characteristics) universities should explicitly highlight the relevance of finance management positions as one of the main potential professional careers for tourism graduates, and the importance of financial competences for such positions. In this line, as Riebe, Sibson, Roepen, and Meakins (2013) note, a growing body of literature point to guest speakers as an efficient education tool, extremely useful to bring 'the real world' to the classroom exposing students to their experiences, perspectives, ideas and knowledge and revealing students differing viewpoints. Professionals working in financial task within the tourism industry could be helpful giving students a 'real view' of the relevance of financial competences for their employability and future career success, altering their initial preconceptions and attitudes in a favourable way (Kong, 2018); something that probed successful in accounting (Fedoryshyn & Tyson, 2003).

Given that tourism students have less interest in these subjects, following Zopiatis et al. (2019) suggestions, additional effort should be made to adapt the content and materials, instead of using the same materials as for a standard finance course taught in a Business degree, increasing the perceived connection with the tourism sector and consequently the perceived relevance of the competences to be developed in such courses. As Fowler and Bridges (2017) suggest, the use of current business events and news (related to tourism firms in our case) to build live case studies, rather than using generic published case studies (which could be seen by students as outdated and irrelevant) is another valuable tool for bridging the perceived gap between academic contents and 'real world' that probed to be successful in areas such as economics (Ghosh & Rahman, 2011).

Palazuelos, San-Martín Espina, Montoya del Corte, and Fernández-Laviada (2018) proposed a Project-Oriented Learning to develop students' attitudes and competences that could be easily transferable to tourism education. Their project consisted of preparing and presenting an issue of a professional-type magazine working in a team. The issue should include a real interview with a professional, a technical article about the subject, and another article focused on a real firm. Their results show a significant impact on interest toward the subject as well as a perceived development of key soft and technical competences.

5.2. Limitations and further research

This paper is not without limitations. First, our sample is limited (one academic year at one country). Second, this paper focusses on the differences of a set of key variables between two groups of students, but there are more potentially relevant variables that have not been covered (e.g., maths anxiety, financial attitude, or financial behaviour). Third, the potential relationships between variables have not been explored. Further research possibilities arise from the results and limitations of this article: future studies could enlarge the

sample with students of other countries and universities in which the tourism degree is relevant. Some of the variables used could be interrelated and could explain actual performance in finance subjects, and the choice-avoidance of finance & accounting related elective subjects, such connections could be modelled and explained. Finally, some educational suggestions were made (e.g. the use of guest speakers or live case studies). To what extent its implementation could have a positive impact is also a relevant further development.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Use of IA

No IA software or APP was used to write this paper. Only standard software was used (word, excel, SPSS)

Author contribution form

José L. Arquero: Conceptualization, Methodology/Study design, Formal analysis, Investigation, Resources, Writing – original draft, Writing – review and editing, Supervision, Project administration; Carmen Fernández-Polvillo: Data curation, Writing – original draft, Writing – review and editing, Visualization, Sergio M. Jiménez-Cardoso: Writing – review and editing.

Appendix

Financial Literacy items

Inflation-applied	Imagine you are told that you are the beneficiary of an inheritance today, but you have to wait one year to get your share (1000 euros), and that inflation for that year is 1%. Within a year you will be able to buy:	1. More than you could buy today with your share of the money, 2. The same amount, 3. Less than they could buy today (Open answer)
Simple interest	Suppose you deposit 100 euros in a savings account with a fixed interest rate of 2% per year. There are no fees or taxes on this account. If you do not make any other movements how much money will be in the account at the end of the first year, once the interest is paid?'	
Compound interest	Suppose you deposit 100 euros in a high interest bearing account with an interest rate of 2% per year, which is added to the balance of that account every year. If there is no further inflow or outflow of money, how much money will be in the account after 5 years?	1. More than 110 euros, 2. 110 euros, 3. Less than 110 euros 4. Cannot be calculated
Risk-return	An investment with a high return is also likely to be high risk	true-false-n.a.
Inflation	High inflation means that the cost of living is rising rapidly	true-false-n.a.
Diversification	It is usually possible to reduce the risk of investing in the stock market by buying a wide variety of stocks (true-false-n.a.)	
Inflation-interest (1)	Suppose the interest rate on your savings account is 1% per year and the annual inflation rate is 2%. After one year, what amount of goods do you think you could buy with the money in your savings account?	1. More than today 2. The same 3. Less than today 4. cannot be calculated
Effective vs nominal interest (2)	A well-known department store chain indicates that it is possible to buy a 500 euro computer, paying in 10 months without interest. Reading the advertisement carefully, the following appears: Nominal rate, NIR: 0%, APR: 5%. This means:	1. You pay 500 euros (0% NIR), 2. You end up paying more than 500, 3. I don't know

Note: All items obtained from the OECD survey except (1) source: [Lusardi and Mitchell \(2014\)](#), (2) own elaboration.

Financial interest items

I like to read news about companies and financial and market issues.
If I am not clear about a concept or question on financial topics, I look for information to better understand it.
I like to talk to colleagues and friends about business and finance topics.
I sometimes look for information about companies, share prices, etc. on the internet.
I like films and documentaries that deal with business and financial topics.

Note: All items are to be answered from 1: *complete disagreement* to 5: *complete agreement*, being 3: *neutral position*.

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