Exploring the relationships between importance–performance analysis (IPA) rankings and satisfaction and loyalty among English as the medium of instruction (EMI) students

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Abstract

**Purpose** – This study sought to investigate the attitudes of Vietnamese undergraduate business students towards English-Medium Instruction (EMI) courses.

**Design/methodology/approach** – Data were collected through purposive sampling using structured questionnaires, resulting in a dataset comprising 291 responses. This study employs a combination of Importance–Performance Analysis (IPA) and structural equation modeling (SEM) to evaluate students’ perceptions of effectiveness of EMI courses, their satisfaction and loyalty.

**Findings** – The study’s findings revealed a noteworthy pattern: students assigned higher levels of importance to various aspects of EMI courses than the actual performance levels of these elements. Additionally, the analysis identified specific attributes that fell into different IPA quadrants, shedding light on their relative significance. Notably, the students placed their teachers’ professional expertise and English proficiency in the “keep up the good work” quadrant, indicating the strengths of these attributes. In contrast, learning assessment techniques, course learning materials, and electronic teaching platforms were situated in the “concentrate here” quadrant, implying room for improvement in these areas. Furthermore, it was observed that attributes falling within the “keep up the good work” quadrant had a positive effect on students’ overall satisfaction and loyalty, while other characteristics did not significantly contribute to predicting these outcomes.

**Originality/value** – Based on these findings, the study offers recommendations for educational institutions and educators concerning the planning and implementation of EMI courses.

**Keywords** EMI, IPA, Satisfaction, Loyalty, Vietnam

**Paper type** Research paper

1. **Introduction**

In recent decades, one of the most noteworthy transformations in higher education (HE) across non-English-speaking countries has been the widespread adoption of English as a medium of instruction (EMI) (Rahman and Singh, 2020). This expansion is primarily attributed to the forces of globalization and internationalization, making English the dominant language of instruction in the academic world (Tsou and Kao, 2017). Even nations with established languages like French and German have seen an increase in English-medium instruction at their universities (Baker and Hüttnner, 2017; Deneire and Benmokhtar, 2024). This trend is not limited to Europe but extends to Asian countries, where EMI programs have become prevalent (Baker and Hüttnner, 2017; Le and Nguyen, 2023).
Educational administrators today have numerous options for evaluating students’ perceptions of service quality in higher education, employing a variety of assessment techniques. However, the challenge lies in identifying the most cost-effective and efficient methods for this purpose, as many existing approaches are either expensive, overly complex, or inadequately suited to the task (Le and Tang, 2022). Consequently, it is imperative for educators to discover and implement more effective techniques for assessing the quality of the service experience.

Some researchers have employed the importance–performance analysis (IPA) technique to examine students’ perceptions and satisfaction with their courses (Jaafar et al., 2016; Tóth et al., 2013). Notably, IPA has been applied to evaluate EMI courses in two distinct studies. Tseng et al. (2020) examined the importance and performance ratings of various dimensions of EMI in shipping courses in Taiwanese higher education, revealing intriguing disparities in how students assessed different aspects of EMI. Shih (2020) employed IPA to assess the outcomes of EMI courses in tourism and hospitality, highlighting the strengths and areas for improvement of such programs. Le and Tang (2022) developed an EMI effectiveness scale and applies importance-performance analysis (IPA) to assess EMI courses in Taiwanese and Vietnamese universities, revealing that teacher characteristics are the most crucial factor, while “cross-cultural and international outlook development” is the least important.

Building on this foundation, the present study utilizes the practical and valuable method of importance–performance analysis (IPA) to gauge students’ assessments of EMI courses. Data was collected from 291 Vietnamese undergraduate business majors using structured questionnaires through purposive sampling. The study aims to address several key questions: (1). Which factors do students perceive as needing greater attention? (2). Which factors do students consider equally important? (3). Which factors require minimal focus? (4). Which factors do not warrant attention, freeing up resources for other areas?

Moreover, EMI courses encompass various attributes, and it is unlikely that students will view all of them with equal importance. These attributes may hold varying significance for different students and contribute to overall satisfaction in diverse ways. Some research has been done on attribute importance, performance, and satisfaction using IPA (Deng and Pierskalla, 2018; Pan, 2015), but there is a lack of studies that have tried to connect IPA with students’ overall satisfaction using structural equation modeling (SEM) or regression analysis, which are the two most common statistical methods used in education. This study seeks to bridge this research gap by testing the relationships between attributes in each IPA quadrant and students’ overall satisfaction. Furthermore, the study aims to investigate whether students’ overall satisfaction can predict students’ loyalty in an EMI context in Vietnam, specifically.

It is worth noting that IPA posits that “attribute performance will have little influence on overall satisfaction when self-stated importance is low” (Taplin, 2012) (p. 296). This assumption, however, has seldom been tested in the literature, and without empirical validation, caution is warranted when drawing conclusions based on IPA. Therefore, this research aims to utilize the attributes in each IPA quadrant as observed variables in SEM to investigate the assumption that “overall satisfaction will be less affected by attribute performance when the self-stated importance of the attribute is low” (Taplin, 2012) (p. 303).

2. Literature review

2.1 EMI in Vietnam and business courses

The origins of English as a medium of instruction (EMI) programs in Vietnam can be traced back to the year 1986, a pivotal moment when the country initiated a comprehensive economic reform known as Doi Moi, marking its entry onto the global stage (Tran et al., 2021). Following this significant policy shift, Vietnam’s engagement with international...
organizations began to unfold rapidly. The country became a member of the Asia Free Trade Area (AFTA) in 1995, the Association of Southeast Asian Nations (ASEAN) in 1997, the Asia Pacific Economic Cooperation (APEC) in 1998, and the World Trade Organization (WTO) in 2007 (Huong and Albright, 2018). This trajectory of global integration catalyzed the growth of the English language in Vietnam, driven by expanding international business, trade opportunities in the emerging market economy, and an influx of foreign tourists.

Notably, English emerged as the primary foreign language taught in Vietnam. As part of educational reforms, the country introduced English as a Foreign Language (EFL) into its curriculum, extending from primary schools to universities (Le and Chen, 2018). Furthermore, responding to the changing socio-economic landscape, Vietnam’s higher education sector embarked on transformative initiatives. One such move involved restructuring education by introducing EMI in fields like accounting, economics, and physics (Huong and Albright, 2018). The EMI policy aligns with the government’s strategy to bolster the internationalization of Vietnamese higher education, enhance its quality, and bolster the competitiveness of Vietnamese universities in regional and global higher education markets (Le and Tang, 2022). In essence, this reform in higher education aimed to “meet the increasingly diverse demands of various sectors in the new economy and to prepare competent human resources for the nation’s industrialization, modernization, and global integration” (Huong and Albright, 2018).

EMI courses now encompass a variety of formats and curricula. Between 2008 and 2015, the Ministry of Education and Training in Vietnam assessed 35 Advanced Program initiatives at 23 institutions across the country (Luu et al., 2022). These programs enable the adoption of curricula from renowned international colleges into select Vietnamese universities. In 2008, Vietnam National University introduced International Standard Programs (ISP), offering 16 English-language courses (Luu et al., 2022). Subsequently, in 2014, the Ministry of Education and Training (MOET) launched High-Quality Programs at several Vietnamese universities (Nguyen et al., 2017). These programs are characterized by their basis on curricula from renowned Western universities, substantial or complete reliance on English as the medium of instruction for course content delivery, and the employment of highly qualified instructors. The overarching goal of these initiatives is to enhance the quality of university education, augment students’ English proficiency, and consequently enhance the employability of graduates (Le and Tang, 2022).

2.2 Importance–performance analysis (IPA)

In the late 1970s, Martilla and James (1977) introduced an invaluable technique known as importance–performance analysis (IPA), which has since gained widespread recognition as a valuable management tool for enhancing organizational performance. This approach serves as a critical instrument for managers to gain insights into customer satisfaction and effectively identify and prioritize areas in need of service or product improvement (Ormanovic et al., 2017).

Traditionally, IPA hinges on assessing the mean importance and performance of various facets of service quality, all derived directly from user evaluations. It maps these dimensions onto a coordinate system, where the horizontal axis represents performance, and the vertical axis symbolizes importance (Martilla and James, 1977).

Although initially developed in a marketing context to enhance services and products within the service industry, IPA has extended its reach into various domains. Today, it finds applications in engineering, tourism, transportation, medicine, construction, and an array of professions. Furthermore, it is employed in social sciences, operations management, and a diverse spectrum of disciplines.

To elucidate its functionality, IPA operates in a manner similar to a course evaluation. It serves to unveil which components of a course students regard as either significant or
insignificant, while also identifying those areas that perform admirably or fall short of satisfying their expectations. By contrasting the findings on importance and satisfaction, it becomes possible to discern not only the aspects that meet students’ satisfaction but also those that disappoint them. Consequently, the results are categorized into four distinct quadrants, each offering unique insights:

(1) Quadrant I: “Concentrate here” (high importance and low performance)
(2) Quadrant II: “Keep up the good work” (high importance and high performance)
(3) Quadrant III: “Low priority” (low importance and high performance)
(4) Quadrant IV: “Possible overkill” (low importance and high performance)

This four-quadrant model effectively guides decision-makers in prioritizing improvements and optimizing resources based on the importance and performance of specific attributes or features (see Figure 1).

2.3 Dimension and items
When assessing students’ perceptions of the effectiveness of English as a Medium of Instruction (EMI), various dimensions come into play. Macaro et al. (2018) have outlined several factors that influence the efficacy of EMI education, primarily revolving around how courses and programs are delivered. These factors encompass the appropriateness of materials, adequacy of teacher training, teacher awareness of learners’ needs, learners’ English proficiency, and the support provided by the teaching and learning environment. Furthermore, other elements, such as the English proficiency of students and instructors, students’ learning methods, instructors’ teaching methods, curricula, learning environments, and teaching and learning facilities, have been identified in relation to EMI courses (Ngo et al., 2018).

Drawing upon previous research findings, Tseng et al. (2020) devised a framework that encapsulates 20 items related to EMI courses, categorizing them into four key dimensions: course objectives and content, learning resources, students’ learning characteristics, and teachers’ teaching characteristics. This framework proves to be a suitable method for

![Figure 1. Importance–performance analysis (IPA) model](image-url)
assessing students’ perceptions of efficiency and satisfaction in EMI courses, and it serves as the basis for this study.

Now, let’s delve into each of these dimensions:

Course objective and content: Tseng et al. (2018) have stressed the significance of elements like course material, learning assessments, and learning strategies in the design of EMI courses. Additionally, Nguyen et al. (2016) emphasized the importance of adapting course content to students’ needs to ensure quality teaching and learning outcomes. Tseng et al. (2020) identified six items for measuring course objectives and content, which include course learning objectives, course learning materials, course learning motivation, relevance of subject to theory, relevance of subject to practice, and learning assessment methods.

Learning Resources: Learning resources encompass a broad spectrum, ranging from textbooks and eBooks to online/blended learning platform resources and in-person interactions with instructors (Tseng et al., 2018). These resources enable students to access course materials, participate in discussions, and submit assignments. Universities can incentivize the development of EMI courses by offering English-language education activities (Kong and Wei, 2019). Additionally, tutors are available during office hours to provide academic counseling (Galloway and Ruegg, 2020). Universities can also establish partnerships with foreign institutions in the USA or UK to bolster learning resources and enhance EMI teaching performance (Nguyen et al., 2016). To evaluate the quality of learning resources, Tseng et al. (2020) identified four items: electronic teaching platform, classroom facilities, availability of assistance, and the variety of relevant courses.

Students’ Learning Characteristics: Students’ learning characteristics encompass diverse aspects, including their backgrounds (e.g. English proficiency level, professional knowledge, learning strategies, and habits) and their perceptions of any potential challenges associated with studying in English (Kong and Wei, 2019). In certain countries, students are required to provide English test results (e.g. IELTS, TOEFL or TOEIC) to attend EMI courses (Rose et al., 2020). Understanding students’ motivation, needs, learning approaches, and strategies, particularly those developed within the classroom, is crucial for implementing effective EMI courses (Jiang et al., 2019). To assess students’ learning characteristics, Tseng et al. (2020) identified five items: students’ background knowledge, students’ English level, incentives for students, students’ engagement in learning, and students’ learning strategies.

Teachers’ teaching characteristics: The characteristics of instructors significantly influence students’ evaluations of EMI courses. Instructors are expected to possess a strong grasp of teaching topics and a high level of English proficiency (Karakas, 2019; Nguyen et al., 2016). Encouragement from instructors is noted as a pivotal factor in motivating and engaging learners (Filgona et al., 2020). Effective class discussions and feedback between students and teachers are integral to achieving optimal learning and teaching outcomes. Moreover, instructors with prior EMI teaching experience are better equipped to understand common learning difficulties and students’ needs (Tseng et al., 2018). As per Karakas (2019), teaching skills are paramount in EMI. To assess teachers’ teaching characteristics, Tseng et al. (2020) identified five items: teachers’ professional knowledge, teachers’ English level, teachers’ active encouragement, classroom interaction, and feedback and group discussion in the classroom.

2.4 Importance, performance, and satisfaction

Satisfaction, as defined by Reynoso (2010), is the judgment that a product, service feature, or the product or service itself, provides a gratifying level of consumption-related fulfillment (p. 13). In the context of the student-as-customer (SAC) paradigm, students are perceived as the primary consumers of higher education institutions, where satisfaction arises from a comparison between their expectations and perceived performance (Kotler and Clarke, 1986).
This paradigm underscores the ethical prerogative that students, as clients, should have their voices heard and that educational aspects should be adaptable to their needs (William, 2002). It is crucial to assess customer satisfaction to gauge the effectiveness of tertiary institutions in delivering products to their primary consumers, the students. This evaluation entails considering students’ overall satisfaction levels (Alemu and Cordier, 2017; Karakas, 2017).

According to Liljander and Strandvik (1993), satisfaction is influenced by disconfirmation, which can be positive (performance exceeds expectations) or negative (performance falls short of expectations). Disconfirmation can be measured through two methods: inferred measure and direct measure. In inferred measure, the score for the measured standard of comparison is subtracted from the score for perceptions, while direct measure involves consumers indicating whether their expectations are “better than expected” or “worse than expected” using a Likert scale (p. 121).

Generally, expectations are assessed prior to purchasing or consuming a product or service, whereas service quality and satisfaction are assessed during the actual experience (Liljander and Strandvik, 1993). Some research in this area has focused on measuring the importance of attributes and examining their correlation with attribute-level or overall satisfaction (Deng and Pierskalla, 2018; Pan, 2015). Previous studies have demonstrated the significant impact of both importance and performance on overall satisfaction. For example, Abooali et al. (2015) found that both importance and performance directly contribute to satisfaction, with performance having a more significant impact than importance. Furthermore, importance indirectly influences satisfaction by affecting performance. Similarly, Frimpong and Wilson (2013) revealed that performance was a stronger predictor of overall satisfaction. However, some findings showed that the importance of product attributes and satisfaction were significantly correlated (Malekpour et al., 2022; Wang et al., 2018). This suggests that importance and performance are intertwined and should not be treated separately when examining overall satisfaction.

This concept corresponds to the notion that the satisfaction level will be less affected by the performance of an attribute when the importance of that attribute, as stated by oneself, is low (Deng and Pierskalla, 2018). In simpler terms, if customers (students in this study) do not place much importance on or are indifferent to a particular attribute, its performance, regardless of its quality, may have a minimal impact on their overall satisfaction. Conversely, attributes of high importance and high performance are more likely to significantly influence overall satisfaction.

Based on this rationale, the following hypotheses are proposed:

**H1.** Attributes falling into the “II. Keep up the good work” quadrant will make a significant and positive contribution to overall satisfaction.

**H2.** Attributes in the “I. Concentrate here” quadrant will significantly and negatively predict overall satisfaction.

**H3.** Attributes in the “III. Low priority” quadrant will not significantly contribute to overall satisfaction.

**H4.** Attributes in the “IV. Potential overkill” quadrant will not significantly contribute to overall satisfaction.

### 2.5 Students’ satisfaction and loyalty

In the realm of higher education, student loyalty is often defined as the inclination to recommend one’s own university to friends and acquaintances, speak favorably about the institution, and consider returning for further studies (Webb and Jagun, 1997). In simpler terms, it encompasses a student’s willingness to endorse their alma mater. Austin and Pervaiz (2017)
provide another perspective, suggesting that loyal students not only offer positive word-of-mouth recommendations but may also extend their support by contributing financially to their academic institution.

To capture the essence of student loyalty, two specific items were employed: “If I had an opportunity to take another course via EMI, I would gladly do so” and “I would recommend EMI courses to other students.”

Numerous studies have consistently shown a positive correlation between students’ satisfaction and their loyalty (ALAM et al., 2021; Austin and Pervaiz, 2017; Borishade et al., 2021). It appears that satisfaction serves as the driving force behind student loyalty, leading to the propagation of favorable word-of-mouth recommendations among students (Alves and Raposo, 2007; Giantari et al., 2021; Rehman et al., 2020). Hence, the following hypothesis is proposed:

\[ H5. \text{ Overall satisfaction will significantly and positively predict loyalty.} \]

The research conceptual framework is presented in Figure 2. below.

### 3. Method

#### 3.1 Sample

The research methodology encompassed a cross-sectional survey using a structured questionnaire to gather data from a specific group of respondents: students enrolled in English-Medium Instruction (EMI) business courses. The process unfolded in several distinct phases. Initially, a draft of the structured questionnaire was crafted in English. This draft incorporated measurement items from prior studies, serving as a foundational framework. Then, to make the questionnaire accessible to the target audience, it was professionally translated into Vietnamese. This translation was undertaken by two lecturers from different universities, who independently translated the initial questionnaire. A critical step involved back translation, which was employed to validate the measurement scales. This rigorous process confirmed that the translated version retained the intended meaning and maintained accuracy. Subsequently, a pretest phase involved 10 students currently enrolled in an EMI course at a public university. Their feedback was invaluable in refining the questionnaire.
The questionnaire was modified to enhance clarity, organization, and overall coherence based on their input. The primary survey was executed over the course of one month using purposive sampling. The research team approached both public and private universities offering EMI courses, with these courses being officially listed in the schools’ academic programs. Lecturers were approached, and a consensus was reached to facilitate the distribution of questionnaires to the students. By following this methodical approach, the research aimed to collect comprehensive and reliable data from the target student population effectively and efficiently.

3.2 Measures
The students’ perceptions of importance and performance factors were adapted from Tseng et al. (2020) and encompassed four dimensions: “Course objective and content” with six items, “Learning resources” with four items, “Students’ learning characteristics” with five items, and “Teachers’ teaching characteristics” with five items, all of which were assessed using a 5-point Likert scale (1 = not important at all to 5 = very important for importance; 1 = strongly disagree to 5 = strongly agree for performance).

“Students’ loyalty” (LO) is evaluated using three questions, and “Students’ overall satisfaction” (SAT) is assessed using five items, both of which were adapted from Ali et al. (2016), with response options on a scale from 1 (strongly disagree) to 5 (strongly agree).

3.3 Analytic strategy
We employed the SPSS software version 24.0 and AMOS version 23.0 for data analysis. Initially, a factor analysis was carried out to authenticate the reliability and validity of the EMI scale’s effectiveness factors. Subsequently, a paired samples t-test was utilized to gauge the perception disparity between the average of importance (I) and performance (P). According to Barsky, lower importance ratings (P-I ≤ 0) tend to exert a lesser influence on overall perceptions, whereas higher importance scores (P-I ≥ 0) are inclined to significantly affect customer satisfaction. For the third step, the IPA method was applied to determine the students’ evaluation of the EMI effectiveness factors’ importance and performance. In the final stage, structural equation modeling (SEM) was introduced to validate the proposed hypothesis.

4. Results
4.1 Descriptive data
Table 1 provides an overview of the demographic attributes of the study participants. The sample consisted of 291 university students, comprising 99 males (34%) and 192 females (66%). The majority of the participants were in their second and third years of university studies (constituting 91.1% of the sample) and had previously enrolled in more than four EMI courses (accounting for 92.4% of the participants).

4.2 Paired samples t-test
In Table 2, the outcomes of paired-sample t-tests comparing the mean disparities between performance and importance for 20 paired items are displayed. The mean values for performance and importance were 3.74 and 4.05, respectively. The t-tests indicated that results for 17 out of the 20 paired items exhibited significant differences. In the majority of cases, the performance ratings were notably lower than the corresponding importance ratings.
<table>
<thead>
<tr>
<th>Code</th>
<th>Items</th>
<th>Mean P</th>
<th>I</th>
<th>GAP (P–I)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Course learning objectives</td>
<td>3.76</td>
<td>4.26</td>
<td>−0.50</td>
<td>−8.43</td>
<td>***</td>
</tr>
<tr>
<td>S2</td>
<td>Course learning materials</td>
<td>3.77</td>
<td>4.13</td>
<td>−0.36</td>
<td>−9.59</td>
<td>***</td>
</tr>
<tr>
<td>S3</td>
<td>Course learning motivation</td>
<td>3.47</td>
<td>3.82</td>
<td>−0.34</td>
<td>−10.38</td>
<td>***</td>
</tr>
<tr>
<td>S4</td>
<td>Relevance of subject to theory</td>
<td>3.76</td>
<td>4.38</td>
<td>−0.62</td>
<td>−1.00</td>
<td>0.32</td>
</tr>
<tr>
<td>S5</td>
<td>Relevance of subject to practice</td>
<td>3.75</td>
<td>3.74</td>
<td>0.01</td>
<td>−10.39</td>
<td>***</td>
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<tr>
<td>S6</td>
<td>Learning assessment methods</td>
<td>3.59</td>
<td>3.75</td>
<td>−0.16</td>
<td>−2.86</td>
<td>*</td>
</tr>
<tr>
<td>S7</td>
<td>Electronic teaching EMI courses</td>
<td>3.60</td>
<td>3.93</td>
<td>−0.33</td>
<td>−2.41</td>
<td>*</td>
</tr>
<tr>
<td>S8</td>
<td>Classroom facilities</td>
<td>3.62</td>
<td>4.28</td>
<td>−0.66</td>
<td>−4.79</td>
<td>***</td>
</tr>
<tr>
<td>S9</td>
<td>Availability of assistance</td>
<td>3.92</td>
<td>4.08</td>
<td>−0.16</td>
<td>−6.41</td>
<td>***</td>
</tr>
<tr>
<td>S10</td>
<td>Wide variety of relevant courses</td>
<td>3.79</td>
<td>4.08</td>
<td>−0.29</td>
<td>−4.50</td>
<td>***</td>
</tr>
<tr>
<td>S11</td>
<td>Students' professional knowledge</td>
<td>3.84</td>
<td>4.07</td>
<td>−0.23</td>
<td>−4.23</td>
<td>***</td>
</tr>
<tr>
<td>S12</td>
<td>Students' English level</td>
<td>3.84</td>
<td>3.86</td>
<td>0.16</td>
<td>−4.09</td>
<td>***</td>
</tr>
<tr>
<td>S13</td>
<td>Incentives for students</td>
<td>3.57</td>
<td>3.86</td>
<td>−0.29</td>
<td>−1.67</td>
<td>0.10</td>
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<tr>
<td>S14</td>
<td>Students' involvement in learning</td>
<td>3.65</td>
<td>3.95</td>
<td>−0.30</td>
<td>−3.53</td>
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<tr>
<td>S15</td>
<td>Students' learning strategies</td>
<td>3.66</td>
<td>4.55</td>
<td>−0.89</td>
<td>−5.53</td>
<td>***</td>
</tr>
<tr>
<td>S16</td>
<td>Teacher's professional knowledge</td>
<td>4.17</td>
<td>4.37</td>
<td>−0.20</td>
<td>−7.68</td>
<td>***</td>
</tr>
<tr>
<td>S17</td>
<td>Teacher's English level</td>
<td>3.87</td>
<td>4.19</td>
<td>−0.32</td>
<td>−7.92</td>
<td>***</td>
</tr>
<tr>
<td>S18</td>
<td>Teachers' active encouragement</td>
<td>3.79</td>
<td>4.07</td>
<td>−0.29</td>
<td>−6.76</td>
<td>***</td>
</tr>
<tr>
<td>S19</td>
<td>Classroom interaction and feedback</td>
<td>3.73</td>
<td>3.78</td>
<td>−0.05</td>
<td>−6.59</td>
<td>***</td>
</tr>
<tr>
<td>S20</td>
<td>Group discussion in the classroom</td>
<td>3.69</td>
<td>4.14</td>
<td>−0.45</td>
<td>−1.60</td>
<td>0.11</td>
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<td></td>
<td>Average</td>
<td>3.74</td>
<td>4.05</td>
<td></td>
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</tbody>
</table>

Note(s): P = performance, I = importance
Source(s): Authors’ own work

Table 2. Paired-sample t-tests for mean differences between performance and importance
4.3 Importance–performance analysis

To identify the most critical development priorities and prioritize managerial actions, an Importance–Performance Analysis (IPA) was conducted. The results are presented in Figure 3, and the findings are summarized in Table 3.

Quadrant I - “Concentrate Here”: This quadrant signifies attributes with a high level of importance but a low level of performance, indicating significant weaknesses in the course. Immediate improvements or interventions are necessary. In this quadrant, there is one attribute related to learning resources (S8), one attribute associated with students’ learning characteristics (S15), and one attribute tied to teachers’ teaching characteristics (S20).

Quadrant II - “Keep Up the Good Work”: In this quadrant, attributes exhibit both high importance and high performance, representing critical strengths that should be maintained to preserve the advantages of the course. Attributes from different areas include three related to the course’s objective content (S1-2, S4), two linked to learning resources (S9-10), one concerning students’ learning characteristics (S11), and two associated with teachers’ teaching characteristics (S16-17).

Quadrant III - “Low Priority”: This quadrant encompasses attributes with low importance and low performance, indicating that stakeholders should not prioritize them for...
improvement. It includes three attributes related to the course’s objective content (S3, S5, S6), one for learning resources (S7), two related to students’ learning characteristics (S13-14), and one associated with teachers’ teaching characteristics (S19).

Quadrant IV - “Potential Overkill”: Attributes in this quadrant have low importance but high performance, suggesting that resources allocated to these attributes may be better used elsewhere. This quadrant consists of one attribute associated with teachers’ teaching characteristics (S18) and one related to students’ learning characteristics (S12).

However, there are still some items that are relatively close to the median crossline, including S12, S4, S9-S11. These results indicate that, since these attributes are still important (with scores above 3.6) but performed relatively lower, Vietnamese universities should focus on improving these attributes to enhance their EMI courses further.

4.4 Factor analysis

The Cronbach’s alpha test was employed to assess the reliability of the research variables, which were divided into four factors: Factor I (3 items), Factor II (8 items), Factor III (7 items), and Factor IV (2 items). The results indicated that the Cronbach’s alpha values for these dimensions were 0.64, 0.84, 0.85, and 0.57, respectively. Additionally, the percentage of variance explained by the four-dimensional scale was 58.38% for Factor I, 47.70% for Factor II, 52.58% for Factor III, and 69.82% for Factor IV. In summary, these results suggest that the scales used in the study exhibited adequate reliability and validity, supporting their suitability for assessing the research variables (see Table 4).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>S8</td>
<td>0.74</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>S15</td>
<td>0.79</td>
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<tr>
<td>S20</td>
<td>0.76</td>
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<tr>
<td>S1</td>
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<td>S2</td>
<td></td>
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<tr>
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<td>1.75</td>
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<td>3.68</td>
<td>1.40</td>
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<td>58.38</td>
<td>47.70</td>
<td>52.58</td>
<td>69.82</td>
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<tr>
<td>Cronbach’s alpha</td>
<td>0.64</td>
<td>0.84</td>
<td>0.85</td>
<td>0.57</td>
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</tbody>
</table>

Source(s): Authors’ own work

Table 4. Factor analysis result
4.5 Importance–performance quadrants and structural equation modeling

To assess the relationships between items in each IPA quadrant and overall satisfaction, an initial step involved introducing covariance arrows to all exogenous variables. This modeling approach yielded a well-fitting model, as evidenced by various fit statistics, including \( \chi^2/df \) ratio of 2.41, \( p < 0.001 \), RMSEA of 0.07, CFI of 0.91, GFI of 0.89, IFI of 0.91, and TLI of 0.89.

The results, as portrayed in Table 5 and Figure 4, elucidate the following key findings: Firstly, the construct labeled “keep up the good work” demonstrated a statistically significant and positive correlation with overall satisfaction (\( \beta = 0.42; p\text{-value} < 0.001 \)), thereby affirining the first hypothesis, H1. Surprisingly, none of the three other constructs - “concentrate here,” “low priority,” and “potential overkill” - exhibited a significant relationship with overall satisfaction. While “concentrate here” demonstrated a positive relationship with overall satisfaction (\( \beta = 0.17 \)), it did not reach the conventional level of statistical significance (\( p > 0.05 \)), leading to the rejection of the second hypothesis, H2. Moreover, the regression weights for “potential overkill” and “low priority” were 0.46 and 0.31, respectively, indicating that no items within these quadrants significantly impacted overall satisfaction, firmly supporting the third and fourth hypotheses, H3 and H4. Lastly, it was established that overall satisfaction significantly and positively contributed to loyalty (\( \beta = 0.71, p < 0.001 \)), affirming the fifth hypothesis, H5.

<table>
<thead>
<tr>
<th>H</th>
<th>Relationship</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>( p )</th>
<th>Decision</th>
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<tr>
<td>H1</td>
<td>Factor II ( \rightarrow ) SAT</td>
<td>0.42</td>
<td>0.29</td>
<td>3.27</td>
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<tr>
<td>H2</td>
<td>Factor I ( \rightarrow ) SAT</td>
<td>0.17</td>
<td>0.23</td>
<td>1.50</td>
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<td>1.02</td>
<td>0.31</td>
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<tr>
<td>H4</td>
<td>Factor IV ( \rightarrow ) SAT</td>
<td>-0.88</td>
<td>21.98</td>
<td>-0.74</td>
<td>0.46</td>
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<tr>
<td>H5</td>
<td>SAT ( \rightarrow ) LO</td>
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<td>0.05</td>
<td>9.35</td>
<td>***</td>
<td>Accept</td>
</tr>
</tbody>
</table>

Table 5. Path coefficients and regression weights

Note(s): *** \( p < 0.001 \), ** \( p < 0.01 \), * \( p < 0.05 \)
Source(s): Authors’ own work

Figure 4.
Path diagram of the estimated model

Source(s): Authors’ own work
5. Discussion and conclusion
This study embarked on a multifaceted exploration of students’ assessment of EMI courses. It began with the application of Importance–Performance Analysis (IPA) to gauge the performance of these courses. Subsequently, it sought to test the intriguing premise that “overall satisfaction is less influenced by attribute performance when the self-stated importance of an attribute is low.” The theoretical model was then assessed through structural equation modeling (SEM), based on a set of underlying hypotheses, illuminating the connections between IPA quadrant positions and students’ overall satisfaction with their university experience. Additionally, the study examined the potential implications of these relationships on students’ loyalty. This section delves into three pivotal findings.

First and foremost, the IPA analysis unveiled that EMI courses in Vietnam exhibit commendable performance, with the majority of attributes (17 out of 20) falling below the iso-rating line, indicating performance surpasses importance. Furthermore, the “keep up the good work” quadrant encompassed eight attributes, outpacing the “concentrate here” area, which housed three attributes. This underscores that EMI courses hold a strong allure due to their learning resources, students’ learning characteristics, and teachers’ teaching characteristics. To uphold course quality, educators, institutions, and policymakers must focus on sustaining or enhancing these pivotal attributes. Notably, several attributes related to learning resources, students’ learning characteristics, and teachers’ teaching characteristics also resided in the “keep up the good work” quadrant. This finding suggests that involving more professionals in EMI classes could yield effective outcomes.

The study also delved into the ongoing debate surrounding the use of absolute versus relative measures of importance and performance in predicting overall satisfaction. It proposed that the relative differences between importance and performance and the relative distinctions within the IPA quadrants significantly determine overall satisfaction. This modeling of relative values offered robust support for the notion that “overall satisfaction will be influenced less by attribute performance when the self-stated importance of the attribute is low.” The model underscored that attribute with lower importance in the “low priority” and “potential overkill” quadrants made negligible contributions to overall satisfaction, whereas attributes in the “keep up the good work” quadrant, boasting higher importance and performance ratings, had a more substantial impact. This insight implies that educational institutions should allocate resources to address attributes like “students’ English level” and “teachers’ active encouragement,” which were situated in the “concentrate here” and “keep up the good work” quadrants.

Furthermore, the study affirmed the well-established relationship between overall student satisfaction and loyalty, aligning with earlier research (ALAM et al., 2021; Austin and Pervaiz, 2017; Borishade et al., 2021). This finding highlights the imperative for educational institutions to enhance the quality of their services to elevate student contentment and retention, especially in a highly competitive academic landscape. Additionally, the study underscores the significance of an institution’s reputation in the realm of higher education. Consequently, institutions might find it advantageous to invest resources in strategic communication and marketing endeavors to cultivate a distinct image and competitive position.

Despite its valuable insights, this study has inherent limitations. Its sampling method, centered on business majors, may not fully capture the perceptions of all students. Moreover, cultural and environmental factors, as well as the perspectives of other stakeholders such as teachers and institutions, were not comprehensively addressed. The absence of self-reports or in-depth interviews hindered a deeper understanding of students’ perspectives, pointing to avenues for future research. Consequently, future research could explore students’ viewpoints and ideas for enhancing EMI quality, potentially through recall methodology. In sum, this study underscores the critical role of promoting students’ satisfaction and the factors that render courses effective in gauging educational success for institutions and students alike.
References


Further reading

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