

Difference between students' and parents' demand for educational function of study tour products

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Abstract: Study tour products possess both tourism and educational attributes. Understanding consumer psychology is key to satisfaction, yet student and parent demands remain understudied despite their stakeholder importance. Therefore, this paper aims to analyze the demands and differences between students and parents for the educational functions of products based on the theory of multiple intelligences and the theory of classification of educational objectives. Based on the survey results from 815 respondents, this study classified and analyzed the differences of consumer demands based on the Kano model to determine the priority order for meeting the demands of students and parents. The results showed that there were typical differences between students and parents in terms of demand types, dependence and expectation characteristics. Students demonstrated robust affective and behavioral demands, whereas parents exhibited greater demands in the cognitive and behavioral dimensions. This disparity reveals that in the design of study tours, the experience demands of students and the educational outcome expectations of parents need to be taken into account. These findings offer practical guidance for practitioners to optimize product design and formulate differentiated marketing strategies, which is of significant practical importance for enhancing the satisfaction and market competitiveness of study tour products.

Keywords: Demand, Educational function, Kano model, Students and parents, Study tour products.

1. Introduction

Study tours serve as a crucial form of bridging on-campus and off-campus education effectively, as well as an important means of educating students through practical experience [1]. Study tour is a vital branch of the tourism industry, widely recognized by many countries as an essential form of both tourism and education. By integrating tourism resources and driving destination consumption, study tours, as a result of the organic fusion between "tourism + education", offer new directions for transforming, upgrading, and innovatively developing traditional tourist products [2]. Consequently, as a crucial component of the tourism market, the future consumer demand for study tours is expected to be robust, and the industry's development potential is exceptionally broad.

In China, the concept of study tour has two categories: narrow-sense and broad-sense [3]. In the narrow-sense, study tour refers to the field trip organized by the school and participated by students, which are conducted by group travel and centralized accommodation for the main purpose of learning knowledge, understanding society and cultivating personality [4]. It is a business-to-school-to-customer flow and school behavior. In this format, the decision maker of product selection is the base/camp or school, the participants are elementary, middle and high school students, and the expenses are borne by the base/camp, school and parents. In a broad-sense, study tour is a tourism activity in which tourists temporarily leave their permanent residence and travel to other places out of the need for knowledge; it is a specialized trip aimed at research and learning, representing a business-to-customer flow and market behavior that significantly differs from the former model [5]. The products are

generally provided by travel agencies, the participants are school students, and the expenses are all borne by their parents. Students and parents play a crucial role in product selection, wielding significant influence over the decision-making process.

Narrow-sense study tours are typically promoted by the government and integrated into the school curriculum system. These programs possess both public welfare and educational attributes; however, they are constrained by factors such as funding and safety concerns, resulting in a relatively low degree of marketization. According to the "In-depth Research on the Current Status of China's Study Tour Industry and Future Investment Research Report (2023-2030)" released by Guanyan Tianxia, this model only accounts for 6.5% of the overall study tour market share [6]. The rest are all broad-sense study tour markets. Furthermore, most current research concentrates on narrow-sense study tours. However, in the actual tourism market, broad-sense study tours exhibit greater tourism demand and can more effectively drive the development of the tourism industry. Unfortunately, research on this particular area remains notably scarce. Therefore, the research content of this paper is study tours in a broad-sense, that is, "group travel activities led by teachers or study instructors as part of learning [7].

Despite the increasing significance of study tours and a notable rise in consumer demand, research on this segment of tourism remains insufficient [8, 9]. The domain of study tours remains relatively unexplored and poorly comprehended within the tourism industry [10] particularly concerning their specific demands [11]. Investigations into consumer demand for the educational functions of products are even more scant. The study tour market possesses unique characteristics that necessitate specialized approaches to product development and marketing strategies. As study tours evolve into an intersectional market that integrates multiple industries, it becomes crucial to prioritize research on the educational demands associated with these products [12]. If marketers, schools, travel agencies and bases/camps aim to increase the number of tourists in the future, it is crucial to gain a comprehensive understanding of consumers' demands for the educational functions of products [13]. Likewise, for destinations and attractions recognizing study tours as a vital component of their tourism strategy, understanding such demands is critical.

However, it is evident that the existing study tour products fail to meet the evolving demands of consumers in terms of both content and quality. Study tour products are typically offered by bases/camps or travel agencies. Students engage in the courses, activities, or projects designed by these providers; however, whether these offerings align with students' needs, interests, willingness to participate, and overall satisfaction is often not the primary focus of the providers. This results in a mismatch between the supply and demand for study tour products, as the courses or activities provided may not correspond to what students actually desire [14]. For example, in the preliminary survey on product demand in Weihai City, one student said, *"I don't want to take the class arranged by the school. I like the baking class. I want to learn to make biscuits and improve my hands-on ability."*

In addition, as participants in study tours and users of products, students' voices are rarely heard. As the actual buyers of the products, parents are almost completely ignored. This results in the absence of two important roles of consumers and buyers among the stakeholders of study tour. In China, whether it is a narrow-sense of study tour (organized by schools) or a broad-sense of study tour (a kind of market behavior), parents need to pay fees. Therefore, parents have a significant say in whether to allow their children to participate in study tours and what kind of study tours to take. When product users and buyers are separated, buyers' consumption preferences largely affect their product choices, so it is extremely critical to consider buyers' demands and cognition of products. Liu has also proclaimed that the demand for off-campus education will be affected by the constraints of parents' objective resource conditions and subjective wishes, and the two will have a linkage effect on educational demands [15]. As an essential form of off-campus education, parents' demand for study tour products should be accorded significant importance.

Therefore, this study focuses on Weihai City in Shandong Province as the case study, examining the demands and discrepancies among different consumer groups including elementary, middle, and high school students as well as parents regarding the educational function of study tour products. This

analysis aims to provide a foundation for subsequent design and development of study tour products. The research sought to answer the following questions:

RQ1: Are there differences between students and parents in their demands for educational functions of study tour products?

RQ2: What are the main differences?

RQ3: What demands should be met first for each party?

2. Theoretical Framework

2.1. Theory of Multiple Intelligences

The theory of multiple intelligences advocates that humans have multiple relatively independent and interacting intelligences. Gardner initially proposed seven types of intelligence: linguistic intelligence, logical-mathematical intelligence, musical-rhythmic intelligence, visual-spatial intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence [16] and later added naturalistic intelligence. Its core assumption is that intelligence is a combination of multiple and contextualized abilities, rather than a single general ability. Educators should develop individual superior intelligence through differentiated activities and cultivate diverse intelligence to adapt to the intelligence preferences of different learners [17]. For example, those with dominant bodily-kinesthetic intelligence are more likely to master historical knowledge through role-playing activities, and students with outstanding natural observation intelligence may show stronger cognitive engagement in ecological research. The theory suggests that differences in students' demand for research products may stem from differences in their intelligence structures. For example, students with high interpersonal intelligence are more looking forward to group cooperation tasks, while those with strong spatial intelligence prefer scenic spot explanations assisted by AR/VR technology.

2.2. Classification Theory of Educational Objectives

Classification theory of educational objectives aims to systematically classify and define the expected outcomes of educational activities. It divides educational objectives into three domains: cognitive, affective and psychomotor [18]. The theory is essentially to meet the development demands of students in different dimensions [19]. Among them, the cognitive domain responds to students' demands for knowledge acquisition and thinking ability. The affective domain focuses on the demands of students' values, attitudes and motivations, helping them to form social personality and lifelong learning motivation. The psychomotor domain emphasizes meeting students' demands for practical operation and physical coordination [20]. The theory points out that the differences in expectations of different stakeholders for educational functions can be mapped to the objective levels they are concerned about. Therefore, study tour products should systematically cover various levels of objectives. For example, parents may pay more attention to the "application" in the cognitive domain (such as remembering historical facts about scenic spots to prepare for exams), schools tend to emphasize the "value integration" in the affective domain (such as cultivating patriotic feelings through study tour), and students may pursue more "creative" level behavioral participation (such as participating in the design of study tours schedule).

The theory of multiple intelligences and classification theory of educational objectives jointly elucidate the formation mechanism of demand differences from the perspectives of individual variations and objective levels, respectively. The former explains the diversity of demands, and different intelligence tendencies lead to differences in students' cognitive/behavioral investment in the same study tour activities (for example, those with linguistic intelligence prefer writing tasks, and those with musical intelligence focus on folk music) [21]. This means that study tour products must meet the demands of different intelligence. The theory also provides a basis for behavioral dimensions, such as bodily-kinesthetic and naturalistic intelligence, which are directly related to students' practical operational demands. The latter helps to construct a hierarchy of demands and defines the operationalization path of the affective dimension, such as from "interest stimulation" (reception level)

to "value shaping" (internalization level) [22]. This is directly consistent with the emotional resonance that consumers seek in study tour products - such as cultivating cultural identity through cultural immersion [23].

Therefore, the combination of theory of multiple intelligences and classification theory of educational objectives can not only explain the differentiation of demands caused by intelligence differences (why there are differences), but also define the stages of demand depth (how the differences are manifested). The cross-analysis of the two provides an integrated framework for understanding the differences in student-parent demands. Based on these two theories, this study summarizes consumers' demand for the educational functions of study tour products into three dimensions, respectively cognitive demands, affective demands, and behavioral demands. Combined with expert consultation opinions, we constructed 26 specific demand items across the three dimensions. The theoretical mapping framework of the division is shown in Table 1.

Table 1.

Theoretical mapping of demand dimensions of educational functions for study tour products.

Demand Dimension	Intelligences Corresponding to the Theory of Multiple Intelligences	Domains Corresponding to Classification Theory of Educational Objectives	Demand Item	Sources
Cognitive demand	Linguistic intelligence, logical-mathematical intelligence, visual-spatial intelligence	Cognitive domain (memory to creation)	Knowledge, academic development, interest in learning, creativity, self-consciousness, independence, environmental awareness	Li, et al. [23]; Coates and Pimlott-Wilson [24]; Avcı and Gümüş [25]; Bai and Wang [26]; Chen and Ye [27] and Quibell, et al. [28]
Affective demand	Interpersonal intelligence, intrapersonal intelligence	Affective domain (acceptance to internalization)	Self-confidence, interpersonal trust, sense of well-being, sense of responsibility, cultural identity, identity, stress relief	Li, et al. [23]; James and Williams [29]; Cooley, et al. [30]; Dabamona, et al. [31]; Lu [32] and Megeirhi, et al. [33]
Behavioral demand	Bodily-kinesthetic intelligence, naturalistic intelligence	Psychomotor domain (imitation to mastery)	Physical fitness, problem-solving skills, adaptability, life skills, teamwork ability, social skills, leadership, expression ability, behavioural habits, concentration, foreign language acquisition, intercultural competence	Tang [1]; Dale and Ritchie [10]; Chen and Ye [27]; Slade, et al. [34]; Yang, et al. [35]; Scrutton [36] and Orson, et al. [37]

2.3. Cognitive Demands

- *Knowledge.* Tang disclosed out that knowledge acquisition or learning is the main purpose of study tour [1]. However, the knowledge in the study tour not only serves the textbooks and classrooms, but also cultivates a wider range of abilities and literacy [38]. Consumer demand for knowledge often includes specialized knowledge and subject-specific knowledge. Among them, specific subject knowledge refers to ecological environmental protection, culture, technology, destination-related knowledge, etc [39].
- *Academic development.* The integration of schooling and outdoor education has been proven to be an effective pedagogy. Different approaches to learning and teaching during a study tour can complement and intertwine with each other, leading to positive outcomes [24]. Avcı and Gümüş's research also certified that study tours can provide a higher-quality learning experience than in

the classroom [25]. His experiment also deemed that the increase in learning achievement is not only reflected in the experiment period, and the improvement in learning ability seemed to continue sometime after the experiment ended. This further shows that study tours have a long-term positive impact on students' academic development.

- *Interest in learning.* When consumers are exposed to new things in the tourism environment, out of curiosity about new things, they will arouse the desire to participate and try, learn through interaction with others, and then acquire a lot of knowledge. Consumers' exposure to new things and situations in the cultural environment of other places will play a role in adjusting the existing thinking mode of individuals, and make it possible for individuals to change their cognitive framework [40]. In this process, consumers continue to accept new cognitions and ways of thinking from the people and things at the destination [13].
- *Creativity.* Study tours help students improve their creativity [26]. The former believes that by engaging in creative activities, children's skills and imagination are expanded. The latter attributes creativity to the advantage action value system and analyzes the action value of study tours. Yin also put forward a similar conclusion, arguing that during the study tour activities, students walked into the live scene and gained intuitive experience and real perception, which significantly improved learners' thinking, creativity and learning ability [41]. In this context, students step out of the frame of mind or physical limitations, and may forge new connections between distant concepts, which is the essence of creativity.
- *Self-consciousness.* Study tours contribute to self-awareness, making students more fully aware of their strengths and weaknesses [27]. After a period of team interaction and intensive practice, the study tour helps students re-understand themselves, and guides students' self-consciousness such as self-esteem and self-efficacy to develop in a positive direction. As the students in Gmelch's survey reflected, "I've learned that I don't need any pretenses, that if I just be myself people will still like me [42].
- *Independence.* Multiple studies reported increases in skills like independence and confidence during study tours [43, 44]. In an outdoor setting away from parental support, these students develop a sense of independence [29]. Compared with school education, students believe that study tour activities give them more freedom and autonomy. For children accustomed to the routine of school, being able to make their own decisions is a novelty [24].
- *Environmental awareness.* Study tour helps to improve the connection between students and nature and contributes to their positive attitude towards the environment [45]. As Bai and Wang [26] believed, through the knowledge of environmental protection, students have more positive performance in pro-environmental behavior [26]. For example, some students said that they learned not to harm animals by going on study tours [34]. Nawaz and Blackwell reported similar conclusions. He revealed that the children who participated in the study tour were more interested in environmental conservation [45].

2.4. *Affective Demands*

- *Self-confidence.* Students' ability is closely related to their self-confidence [46]. Study tours can improve students' concentration and boost their self-confidence [47]. As Morgan believes, when a student realizes that his cognitive framework conflicts or is insufficient with others, he will fall into confusion, and then prepare for transformation, and finally rebuild his ability and self-confidence in new roles and new relationships [48]. For example, in Cooley's survey, some students made it clear that "I become more confident about myself. I usually speak to myself that you can do it... because you have the ability" [30]. This also confirms the conclusion of Gmelch's investigation of the student's diary, "I now have the confidence that I can handle any situation I encounter, in some way, even if I am alone, unable to communicate easily and unsure of the culture." [32]

- *Interpersonal trust.* Interpersonal outcomes involve how a person interacts with others. During the study tour, students interact with multiple subjects such as peers, groups, and organizers, which effectively promotes interpersonal trust [49]. Students often use interpersonal support to cope with the challenges presented by an activity or course, which is gained through interactions with others, such as trust [30]. At the end of the tour, students reported that they learned how to create a supportive team environment through trust, self-sacrifice, and motivating others.
- *Sense of well-being.* Study tours help to improve individual self-confidence and obtain subjective well-being [12] which is a positive outcome retrospective [50].
- *Sense of responsibility.* Falk asserted that the tourism industry has a responsibility to empower visitors with powerful, transformative learning experiences [51]. As a subdivision of the tourism industry, study tour should also bear this responsibility. Practice has proved that this function has indeed been realized. During the study tour, the children assumed more responsibility for their own activities and had a greater sense of responsibility [29]. They realized that they need to watch how they move so as not to cause harm to themselves, others, or the environment. This is also in line with Coates and Pimlott-Wilson [24] assertion that in tourism activities, through the interaction with nature, tourists' environmental awareness and sense of responsibility will be stimulated [24].
- *Cultural identity.* Educational school tours may contribute to student visitors' cultural identity by facilitating exposure to new cultural values [31]. Exposure to culture with local attributes can effectively enhance students' cultural awareness and promote students' active efforts to maintain their own cultural identity. Lee and Smith [52] likewise claimed that students were interested in learning about their cultural identity and engaged in activities related to cultural identity seeking [52]. Students integrate travel experiences into their sociocultural perspectives, personal lives and identities.
- *Identity.* Identity includes self-identity, destination identity, ethnic group identity, social identity and national identity, etc. Study tour experience is the construction process of identity [32]. Students develop emotional feelings when they encounter cultural attributes of a place, which they believe represent their own identity and are the result of cultivating social bonds [33]. The development of study tour products deeply integrated with culture and tourism is not only conducive to the cultivation of students' core literacy, but also beneficial to activate traditional Chinese culture, so that students can construct their identity through experience.
- *Stress relief.* Both Avcı and Gümüş [25] demonstrated that study tours can reduce student stress, help cope with depression, and improve mental health and general well-being [47]. In an outdoor environment, various activities offer distinct yet often overlapping benefits for children's mental, emotional, and social well-being, such as stress reduction achieved through interaction with plants, animals, or other natural elements. In addition, the survey conducted on the evaluation of study tour products by students and parents also found that the majority of students believe that the greatest benefits of study tours are enriching knowledge and broadening horizons, followed by relaxation and stress relief [35].

2.5. Behavioral demands

- *Physical fitness.* Study tours can increase students' physical activity through a wide range of outdoor activities, and improve students' sports level and physical fitness [36]. Researchers have realized that it is a need or even a necessity for children to have time spent outdoors [25]. Students have achieved great physical gains in the process of study tour Liu, et al. [53]. Cooley, et al. [30] study also reported benefits of physical activity in study tours [30].
- *Problem-solving skills.* Study tour had a significant effect on the improvement of problem-solving ability [54]. Study tours can promote the development of general skills and techniques (e.g. communication, organization, and problem solving) [30]. Students develop important social

emotions in the experiential learning process of actively responding to challenges and solving problems [37]. The cultivation of the problem-solver is the result of the subjectification process that good education should realize, and the result of the socialization function that education should serve [55].

- *Adaptability.* Participating in study tours can help students adapt to the environment and help them learn and live in different ways in a new environment [24]. Away from their usual environment, students experience not only a psychological but also a geographical separation, which helps them reflect on their daily lives in their new environment. At the same time, the relationship, that is, the interaction with the local community, tourism organizers, peers and other people during the travel process will also have an impact on students [56].
- *Life skills.* One of the functions of study tours is to improve children's life skills [44]. In a new and unfamiliar environment, away from the help of parents, study tours consciously cultivate students' ability to explore and guide them to master basic life skills, including taking care of themselves and financial budgeting, etc [27].
- *Teamwork ability.* For students, a study tour is an opportunity to promote their collaborative and team working skills that might not seem possible in a classroom setting [24]. Learning as part of team work increases opportunities for peer-to-peer collaborative learning, which is well documented in improving children's academic performance, peer relationships, and self-esteem [28]. There are also data that fully prove consumers' concern and expectation for teamwork ability. For example, in a survey on the implementation of study tour activities in schools in Beijing, up to 91.9% of parents hoped to improve their children's teamwork spirit through study tour, which accounted for the highest proportion in the product demand survey [35].
- *Social skills.* Study tour can improve students' interpersonal skills and help them build good social relationships [10]. Children have more opportunities to share their thoughts and reflections with their peers and tutors [28]. When participating in study tour activities, children act together with their peers, work democratically, and work hard for common goals [25]. This also further expands their social network.
- *Leadership.* Qualities such as leadership and prestige are learned and practiced in social contexts where people have a strong collective identity. Study tours develop students' social responsibility, character, and leadership through extensive, empirically tested practices [37]. There is evidence that students improve their leadership skills through study tours. In addition, a survey on the demands for educational functions of study tour products found that organizational leadership is also what parents care about and expect (77.4%) [35]. This perfectly supports the conclusion of Orson.
- *Expression ability.* Based on the previous literature, it is found that most researches attribute expression ability to problem-solving ability or communication ability [44] and do not regard it as a function of study tour alone. Only a few scholars have studied the impact of study tours on expression ability. Yang, et al. [35] emphasized that students need to report on their learning outcomes, which can effectively develop their expression ability [35]. According to the survey, 81.8% of parents hope that the study tour can improve their children's expression skills. In a certain context, expression ability is not completely equivalent to problem-solving ability or communication ability. Therefore, this research regards it as a separate requirement element to explore consumers' demand for this function.
- *Behavioral habits.* From the psychological perspective, behavioral habits refer to automatic behavioral patterns formed through repeated practice, such as packing luggage on time during study tours and maintaining hygiene in daily life. Through the literature review, we found that few scholars have studied the improvement of behavioral habits as the purpose of study tours. But in China, many parents hope to improve their children's behavioral habits through study tours [15]. This may be related to the family education atmosphere in China. Similarly, students also

believe that one of the valuable guidance effects of study tour tutors is to improve their behavior habits, which is also a pivotal gain beyond knowledge learning [35]. Therefore, we bring this element into the scope of the study and explore its generality.

- *Concentration.* Trudeau and J Shephard demonstrated that exercise can significantly improve students' concentration and learning behavior. Slade's survey also found that younger children show high levels of focus during a tutor's presentation in a busy and exciting environment [34]. Some older children, who typically have a hard time paying attention in class, also show motivation. However, there is still insufficient research on the promotion of concentration during study tours. This study attempts to do further research.
- *Foreign language acquisition.* By participating in overseas study tour, students not only learn the language, but also experience the customs of the destination country, which is a rare experience for students. Study tours expose children to different languages, which is bound to broaden a child's view of the world [57].
- *Intercultural communication competence.* Cross-border study tours significantly improve the intercultural communication competence of students. What the students learn about other cultures is often superficial, yet the experience is found to be educational in ways that were unexpected [42]. Children are usually uncomfortable in an unfamiliar environment, but through positive encouragement and communication, the children gradually opened their hearts and accepted the way of cross-cultural communication, which is obviously a positive result.
- Therefore, drawing upon the theory of multiple intelligences and the classification theory of educational objectives, this study categorizes consumers' demands for study tour products into three dimensions: cognitive, affective, and behavioral. It further investigates the correlation between the 26 functional elements within these subdivisions and the five demand dimensions proposed by the attractive quality theory - one-dimensional factors, attractive factors, must-be factors, indifferent factors, and reverse factors - to determine their importance and priority in meeting consumer demands. This analysis aims to provide a foundation for designing and developing future study tour products.

3. Methodology

3.1. Participants

Given that the study participants consist of students aged 8-17 and their parents, a combination of cluster sampling and stratified sampling methods was employed to establish the sampling framework for this research. Specifically, cluster sampling was initially utilized to select 6 schools as the case sites, respectively Weihai No. 2 Experimental Primary School, Wendeng District Gaocun Primary School, Rushan Fuqian Middle School, Rongcheng No.34 Middle School, Rushan No. 1 High School and Weihai No. 4 High School. followed by stratified sampling to determine the sample size from each school. The parent sample was assigned the same as the corresponding student sample.

3.2. Instrumentation

The research instrument employed in this study was a questionnaire specifically designed for two distinct groups, namely students and parents. While the core questions remained consistent across both versions, the language expression had been tailored to accommodate the varying comprehension abilities of these two groups. Consequently, the student questionnaire employed simpler and more easily understandable language.

The questionnaire comprised three sections. The initial section investigated the fundamental information of both students and parents separately. The second section focused on comprehending their perception of study tours. The third section concentrated on examining respondents' demand for the educational function of study tour products. In comparison to conventional methods, the implementation of the Kano questionnaire enables a more precise identification of consumer demands'

characteristics and focal points. Consequently, this study employed the Kano questionnaire to analyze consumer attitudes towards a product with or without a specific educational function from both forward and reverse perspectives.

3.3. Data Collection

Data collection was conducted from March 2024 to June 2024. Due to the potential comprehension difficulties faced by elementary school students, on-site distribution and completion of student questionnaires were implemented. Initially, emails were sent to the targeted schools, and upon obtaining permission, on-site surveys were carried out with organized assistance for questionnaire completion. Objective clarifications were provided, when necessary, in response to students' inquiries. Parents exhibited no difficulty comprehending the survey content. Hence, an online survey format was adopted for parent questionnaires to enhance efficiency. The researcher emailed the surveyed schools explaining the survey's purpose and attached a QR code for accessing the questionnaire. Following approval from principals, schools notified parents about their participation in this study. Questionnaire Star software (<https://www.wjx.cn/>) was employed as a tool for data collection due to its notable advantages in terms of speed, coverage range, data receipt capabilities, and cost-effectiveness.

In total, 925 questionnaires were distributed, comprising of 446 student questionnaires and 479 parent questionnaires. A collection of 894 questionnaires was obtained, from which 79 invalid ones were excluded, resulting in a final count of 815 valid questionnaires including 397 student responses and 418 parent responses.

3.4. Data Analysis

The data analysis process could be divided into two stages: 1) Analysis of demand type differences using the Kano model to reveal students' and parents' demands for educational functions in study tour products; and 2) Analysis of dependence and expectation differences using the Dissatisfaction Index (DI) and Satisfaction Index (SI) to assess students' and parents' demands for educational functions.

3.4.1. Demand Type

The Kano model divides consumer demand into five categories: must-be demand, one-dimension demand, attractive demand, indifferent demand and reverse demand. Among them, must-be demand refers to the functional attributes that consumers believe a product must have. When such demands are met, satisfaction will not significantly increase; but when they are not met, satisfaction will be significantly reduced. It is the type of demand with the highest importance and indispensability, reflecting the "dependency" demand at the "need" level. One-dimension demand is the product functional attribute expected by consumers, and its "dependency" is lower than that of must-be demand. However, consumer satisfaction is positively correlated with the optimization level of this demand. This demand can reflect both "dependency" and "expectation". Attractive demand is a demand that exceeds expectations. The lack of corresponding functions will not cause a decrease in satisfaction, but the provision of corresponding functions will effectively improve the satisfaction level and bring unexpected surprises to consumers. Therefore, attractive functions reflect the "expectation" demand tendency at the "want" level. Indifferent demand is a demand attribute that consumers do not care about. Whether this type of demand is provided or not will not affect the consumer's experience and satisfaction. It is the type of demand with the lowest "dependency" and "expectation". Reverse demand refers to the demand attribute that makes consumers dissatisfied. Providing this type of demand will reduce satisfaction; when this type of demand is not available, satisfaction will increase [21].

3.4.2. Dependence and Expectation

In the five functions of the Kano model, the stronger the dependence, the greater consumers "need" it; correspondingly, stronger expectations reflect a higher level of "want" it reflects based on "need". By analyzing the dependence and expectation of each educational function, the degree of consumers' "need"

and "want" can be determined. The magnitude of dependence can be visually represented by DI, while SI reflects the intensity of expectation [58].

DI refers to the extent of decline in satisfaction resulting from unmet consumer demand. The closer the absolute value of DI is to 1, the more severe the decline in satisfaction caused by this lack of demand. Conversely, as the absolute value of DI approaches 0, the impact on satisfaction decreases (or even becomes negligible)¹. SI represents the degree of satisfaction influenced by met demands. A higher SI indicates a greater impact on satisfaction, while a lower SI suggests a lesser effect (or no effect at all) [58].

3.5. Reliability and Validity

The reliability of the student and parent questionnaires was assessed, and the corresponding results were presented in the table provided below.

Table 2.
Reliability of the research instrument.

Instrument	Scale	Number of Items	N	Cronbach's Alpha
Forward questionnaire	Student questionnaire	26	397	0.945
	Parent questionnaire	26	418	0.935
	Overall scale	26	815	0.939
Reverse questionnaire	Student questionnaire	26	397	0.852
	Parent questionnaire	26	418	0.834
	Overall scale	26	815	0.842

The results presented in Table 2 demonstrated that the forward scale of this questionnaire exhibited a high level of internal consistency, with a Cronbach's alpha coefficient (α) of 0.939. Similarly, the reverse scale also demonstrated good reliability, as indicated by an α of 0.842. Both the student and parent questionnaires met the established criteria for judging internal consistency, thus ensuring the robustness and reliability of our research data.

Five experts in study tours and educational psychology were invited to evaluate the relevance of the items, and a 4-level scoring system was used to calculate the CVI. The I-CVI was greater than 0.80, and the S-CVI/Ave was 0.95, indicating that the questionnaire demonstrates excellent content validity.

3.6. Chi-Square Test

The chi-square test was conducted using SPSS to analyze the survey data, specifically focusing on evaluating satisfaction levels when meeting the demands of each educational function. The results indicated a significant disparity in evaluations between students and parents regarding the demands of study tour products' educational function ($P < 0.05$).

Table 3.
Results of difference analysis of satisfaction evaluation when demands were met (n=815).

Respondent	The degree of satisfaction when demands are met					N	P value of Chi-square test
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied		
Students	0	13	48	138	198	397	<0.001
Parents	0	28	45	212	133	418	

¹ The DI value in the Kano model is inherently negative. To enhance clarity and facilitate intuitive comparison, its absolute value is employed for presentation and analysis.

4. Results and Discussion

4.1. Differences in Demand Types

The Kano model was employed to categorize the demands of students and parents, revealing distinct differences between the two groups in demand classification. Specifically, students exhibited 5 must-be demands, 7 one-dimensional demands, 10 attractive demands, and 4 indifferent demands; whereas parents demonstrated 4 must-be demands, 6 one-dimensional demands, 10 attractive demands, and 6 indifferent demands. Detailed results were presented in Table 4.

Table 4.

Classification of students' and parents' demands for educational functions of study tour products.

Demand Dimension	Demand Item	Students' Demand Type	Parents' Demand Type
Cognitive Demands	A1 Knowledge	A	M
	A2 Academic development	A	A
	A3 Interest in learning	A	O
	A4 Creativity	I	I
	A5 Self-consciousness	O	I
	A6 Independence	O	O
	A7 Environmental awareness	A	I
Affective Demands	B1 Self-confidence	M	A
	B2 Interpersonal trust	A	I
	B3 Sense of well-being	A	A
	B4 Sense of responsibility	M	A
	B5 Cultural identity	O	A
	B6 Identity	I	I
	B7 Stress relief	M	O
Behavioral Demands	C1 Physical fitness	I	A
	C2 Problem-solving skills	O	M
	C3 Adaptability	O	O
	C4 Life skills	A	M
	C5 Teamwork ability	M	A
	C6 Social skills	O	O
	C7 Leadership	M	A
	C8 Expression ability	O	A
	C9 Behavioral habits	A	M
	C10 Concentration	A	O
	C11 Foreign language acquisition	I	A
	C12 Intercultural competence	A	I

The results presented in Table 4 indicated that, except for A2, A4, A6, B3, B6, C3 and C6, there were discernible variations in the demand preferences of students and parents for the remaining 19 educational functions. Specific results were as follows:

4.1.1. Must-Be Demand

In this study, students had the greatest demand for the 5 educational functions: self-confidence (B1), sense of responsibility (B4), stress relief (B7), teamwork ability (C5) and leadership (C7). These were the educational functions they most "need" and "depend on". Regarding parents, they were more concerned about knowledge (A1), problem-solving skills (C2), life skills (C4) and behavioral habits (C9). By comparing the classification results with those of the students, it was discovered that all must-be demands of both parties were different educational functions.

4.1.2. One-Dimension Demand

The results of data analysis indicated that the educational functions expected by students were self-consciousness (A5), independence (A6), cultural identity (B5), problem-solving skills (C2), adaptability

(C3), social skills (C6) and expression ability (C8). Parents anticipated interest in interest in learning (A3), independence (A6), stress relief (B7), adaptability (C3), social skills (C6) and concentration (C10). Among them, both groups commonly expected independence, adaptability and social skills. Additionally, the educational functions they "want" were also dissimilar.

4.1.3. Attractive Demand

Regarding this type of demand, there were 10 educational functions that could bring unexpected pleasant surprises to students, namely knowledge (A1), academic development (A2), interest in learning (A3), environmental awareness (A7), interpersonal trust (B2), sense of well-being (B3), life skills (C4), behavioral habits (C9), concentration (C10) and intercultural competence (C12). Furthermore, like the classification of students' demands, parents also had the highest proportion of attractive demands, encompassing 10 educational function attributes, respectively academic development (A2), self-confidence (B1), sense of well-being (B3), sense of responsibility (B4), cultural identity (B5), physical fitness (C1), teamwork ability (C5), leadership (C7), expression ability (C8) and foreign language acquisition (C11). Among these functions, only academic development and sense of well-being could bring pleasant surprises to both students and parents. The other attractive demands were significantly different.

4.1.5. Indifferent Demand

The functions that students considered dispensable were creativity (A4), identity (B6), physical fitness (C1) and foreign language acquisition (C11). The functions that parents showed little concern for were creativity (A4), self-consciousness (A5), environmental awareness (A7), interpersonal trust (B2), identity (B6) and intercultural competence (C12).

4.2. Dependence And Expectation Difference of Demand

By analysing DI and SI, we ascertained the dependence and expectation characteristics of students and parents regarding different educational function demands. Arranged in descending order of DI, the results presented in Table 5 were obtained. The change trends of DI and SI of the two parties were depicted in Figure 1.

Table 5.

DI and SI of students' and parents' demands for different educational functions.

Students						Parents					
Item	DI	SI	Item	DI	SI	Item	DI	SI	Item	DI	SI
B7	0.668	0.453	C9	0.420	0.549	C9	0.650	0.372	C7	0.418	0.536
C7	0.635	0.385	A2	0.420	0.547	C4	0.584	0.350	C8	0.415	0.562
C3	0.626	0.500	C12	0.394	0.575	A3	0.575	0.616	B3	0.411	0.686
B1	0.569	0.367	A4	0.372	0.521	C2	0.530	0.367	A7	0.407	0.469
C6	0.506	0.566	A1	0.366	0.558	A1	0.496	0.318	B4	0.385	0.457
C5	0.506	0.424	C4	0.358	0.479	B7	0.493	0.537	A4	0.384	0.488
B4	0.487	0.386	B3	0.344	0.556	C11	0.493	0.554	C12	0.380	0.515
C8	0.472	0.700	B2	0.333	0.669	C10	0.489	0.612	B1	0.380	0.473
C2	0.470	0.585	B6	0.332	0.460	A6	0.483	0.565	A2	0.379	0.483
A6	0.469	0.588	C10	0.308	0.525	C3	0.475	0.665	B5	0.377	0.697
A5	0.468	0.638	C1	0.297	0.539	C6	0.472	0.597	B2	0.342	0.469
A3	0.448	0.581	C11	0.282	0.533	C1	0.435	0.537	A5	0.329	0.431
B5	0.447	0.592	A7	0.248	0.525	B6	0.435	0.531	C5	0.321	0.561

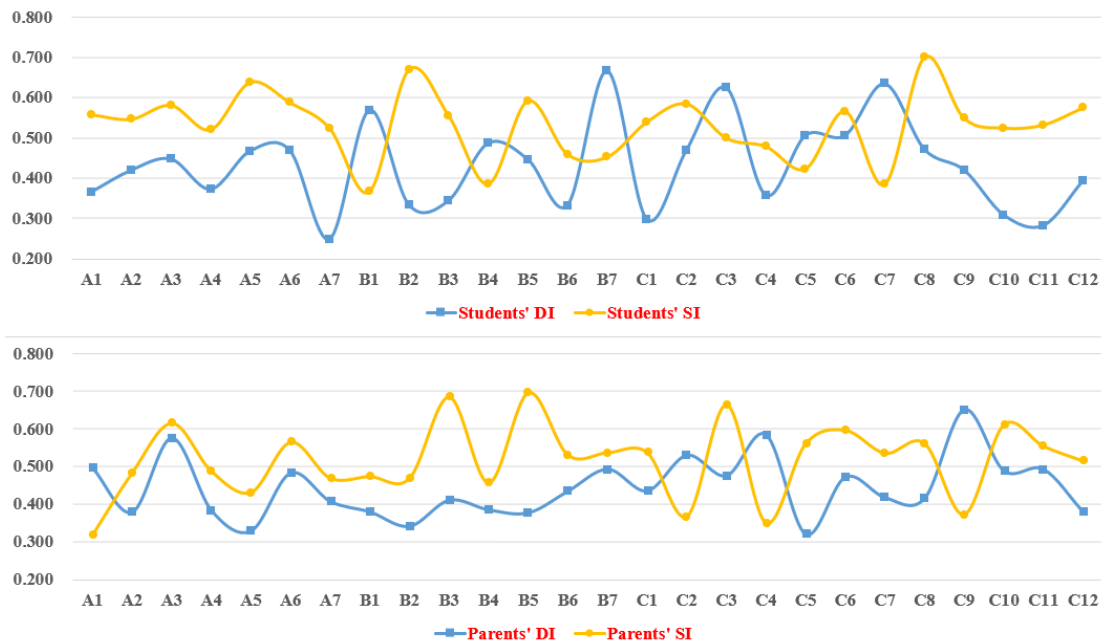


Figure 1.
DI and SI of students' and parents'.

The results in Table 5 and Figure 1 indicated that, for students, the overall characteristic of their demand for educational functions of study tour products was that their expectation exceeded dependence. By comparing DI and SI, it could be observed that the SI of most educational functions was greater than DI, reflecting that the demand of students for most educational functions tended to be more "expectant" than "dependent". Among them, the largest differentials were environmental awareness (A7), interpersonal trust (B2), sense of well-being (B3), physical fitness (C1), expression ability (C8), concentration (C10) and foreign language acquisition (C11), all exceeding 0.2, especially interpersonal trust (B2) exceeding 0.3. This demonstrated that students' expectations for these functional demands were much higher than their dependence. At the same time, there were 6 educational functions with $DI > SI$, of which 3 had large gaps, namely self-confidence (B1), stress relief (B7) and leadership (C7), indicating that their dependence on these educational functions was higher than their expectations.

The dependence of student demand was generally low. Taking the mean coefficient as the criterion ($DI > 0.5$), they had a high degree of dependence on the 6 functional demands of stress relief (B7), leadership (C7), adaptability (C3), self-confidence (B1), social skills (C6) and teamwork ability (C5), accounting for 23.1% of the total demand items. From the perspective of demands, it encompassed 2 affective demands and 4 behavioral demands. Among them, stress relief had the highest DI, reaching 0.668, which indicated that students generally believed that the most fundamental function of study tour products was to relieve stress, and the absence of this function would directly lead to their dissatisfaction. The DI of leadership (C7) and adaptability (C3) were also above 0.6, suggesting that when these educational functional demands were not met, students' satisfaction would significantly decline.

SI is the presentation of "expectation". For students, there were 19 educational functions with an SI exceeding 0.5. Among them, the SI of self-consciousness (A5), interpersonal trust (B2) and expression ability (C8) all exceeded 0.6, and the SI of expression ability was as high as 0.700, indicating that the provision of these three educational functions had a significant effect on improving satisfaction, that is, the expectant tendency of students' demands was prominent.

Like the findings regarding the determination of students' demands, parents' overall demands were characterized by a greater degree of expectation than dependence. Among the 26 items, the SI of 22 educational functions was higher than DI. Further analysis of the disparity between DI and SI revealed that the SI of 3 educational functions was significantly greater than DI, with the differentials exceeding 0.2, namely sense of well-being (B3), cultural identity (B5) and teamwork ability (C5). The disparity of cultural identity exceeded 0.3, indicating that parents' expectations for it were much greater than their dependence. Additionally, there were 4 educational functions that were more dependent than expected, among which the two with the largest gaps were behavioral habits (C9) and life skills (C4). The differentials between DI and SI were 0.278 and 0.234 respectively. This showed that parents' "need" level for these two educational functions was higher than their "want" level.

Just like the dependence characteristics of students, the dependence of parents' demands was also relatively low. Taking 0.5 as the evaluation criterion, only 4 educational functions had a DI greater than the average level, respectively behavioral habits (C9), life skills (C4), interest in learning (A3) and problem-solving skills (C2). This indicated that these were educational functions that parents really "need". In these 4 educational functions, 1 pertained to cognitive demands and 3 belonged to behavioral demands. Among them, parents relied most on behavioral habits (C9), and its DI reached 0.650, suggesting that parents most "need" to cultivate good behavioral habits for their children through study tours. If this demand was not met, it would lead to a significant drop in parent satisfaction.

Like the expectation characteristics of students' demands, parents exhibited high expectations for most educational functions. The SI of 15 educational functions was greater than 0.5, accounting for more than 57.7% of the total. Among them, the SI of interest in learning (A3), sense of well-being (B3), cultural identity (B5), adaptability (C3) and concentration (C10) exceeded 0.6, and the SI of improving students' sense of well-being reached 0.697, indicating that parents really "want" these functions. The realization of these functions could effectively enhance parents' satisfaction with study tour products.

Further comparison of the dependence and expectations of students and parents in different demand dimensions yielded the results presented in Table 6.

Table 6.
DI and SI of students and parents in different demand dimensions.

Research Object	Index	Demand Dimension	Mean	Standard Deviation
Students	DI	Cognitive demands	0.399	0.079
		Affective demands	0.454	0.130
		Behavioral demands	0.440	0.119
	SI	Cognitive demands	0.565	0.041
		Affective demands	0.498	0.112
		Behavioral demands	0.530	0.081
Parents	DI	Cognitive demands	0.436	0.085
		Affective demands	0.403	0.049
		Behavioral demands	0.472	0.089
	SI	Cognitive demands	0.481	0.104
		Affective demands	0.550	0.101
		Behavioral demands	0.519	0.102

In terms of DI, from the perspective of the significance of demands or the dependence of students, the overall trend was "affective demands > behavioral demands > cognitive demands". Among them, the DI of affective demands (0.454 ± 0.130) was the highest, and behavioral demands (0.440 ± 0.119) were greater than cognitive demands (0.399 ± 0.079). In terms of SI, cognitive demands exhibited the highest expectation (0.565 ± 0.041), followed by behavioral demands (0.530 ± 0.081), and students had the lowest expectation for affective demands (0.498 ± 0.112). Meanwhile, students' dependence and expectations differed significantly in the three dimensions. Among them, cognitive demands showed a tendency of "low dependence and high expectations", affective demands showed a tendency of "high

dependence and low expectations", and behavioral demands reflected a tendency of "neutral dependence and neutral expectations".

For parents, their dependence characteristics in the three demand dimensions were "behavioral demands > cognitive demands > affective demands". Specifically, the DI of behavioral demands was the largest (0.472 ± 0.089), followed by cognitive demands (0.436 ± 0.085), and the DI of affective demands was the smallest (0.403 ± 0.049). Analysis of SI found that parents had the highest expectations for affective demand (0.550 ± 0.101), followed by behavioral demands (0.519 ± 0.102), and the lowest expectation was cognitive demands (0.481 ± 0.104). This showed that parents exhibited a tendency of "neutral dependence and low expectations" in the cognitive demands, "low dependence and high expectations" in the affective demand, and "high dependence and neutral expectations" in the behavioral demands.

4.3. Priority of Students' and Parents' Demands

Based on the demand type and DI, the priority sequence of students and parents for various educational functions could be determined. Generally, when fulfilling consumer demands, the priority sequence could be referred to as must-be function > one-dimension function > attractive function > indifferent function > reverse function [58]. Among the same type of demands, those with high DI should be met first [13]. On this basis, the priority sequence of satisfaction for students and parents was obtained (Figure 2 and Figure 3). The four circles corresponded to must-be demands, one-dimension demands, attractive demands, and indifferent demands from the innermost to the outermost. The priority of fulfilling educational function demands decreased as the circles extended outward, and the color of the block gradually lightened. In the future, when designing study tour products for students and parents, one can refer to the demand level depicted in the diagram and provide targeted educational functions.

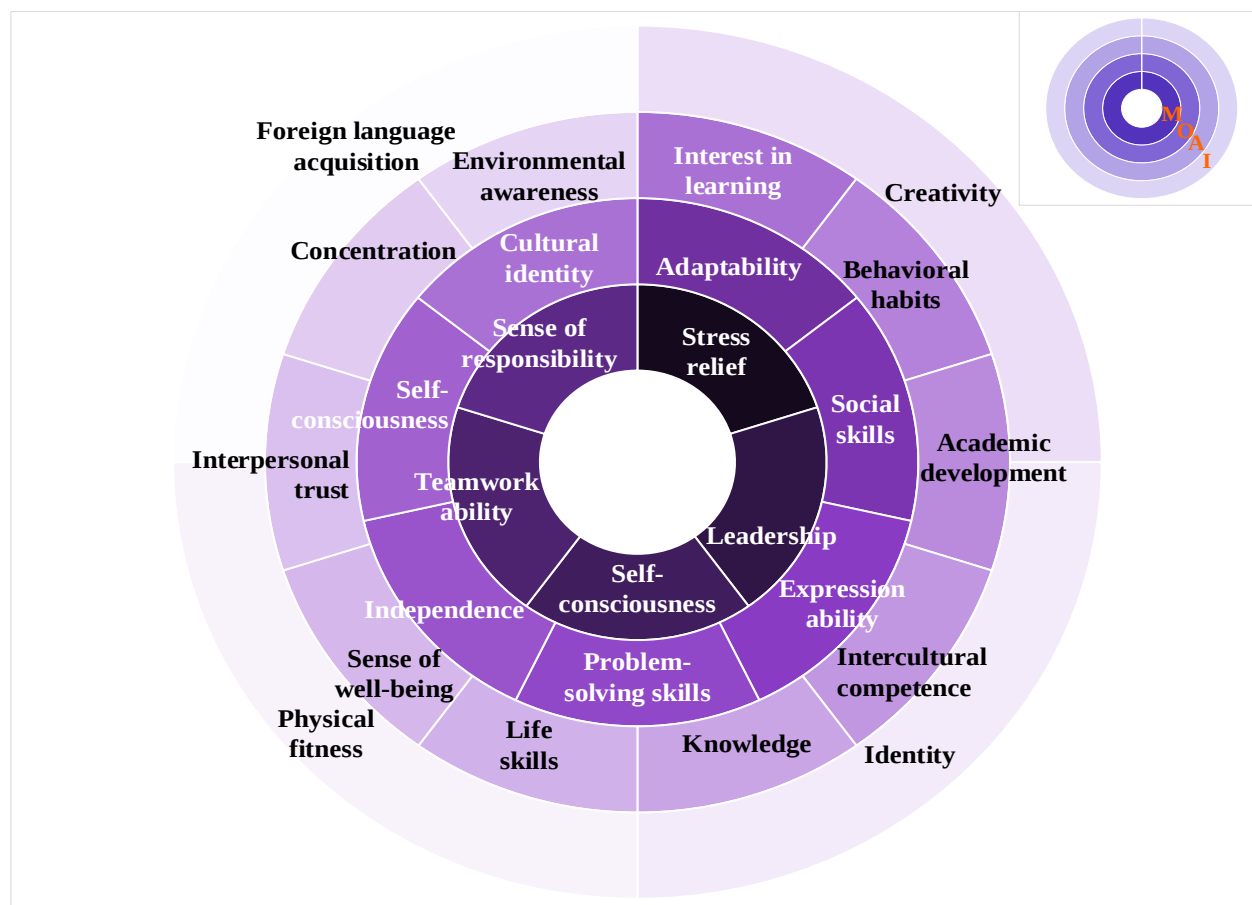


Figure 2.
Priority of students' demands.

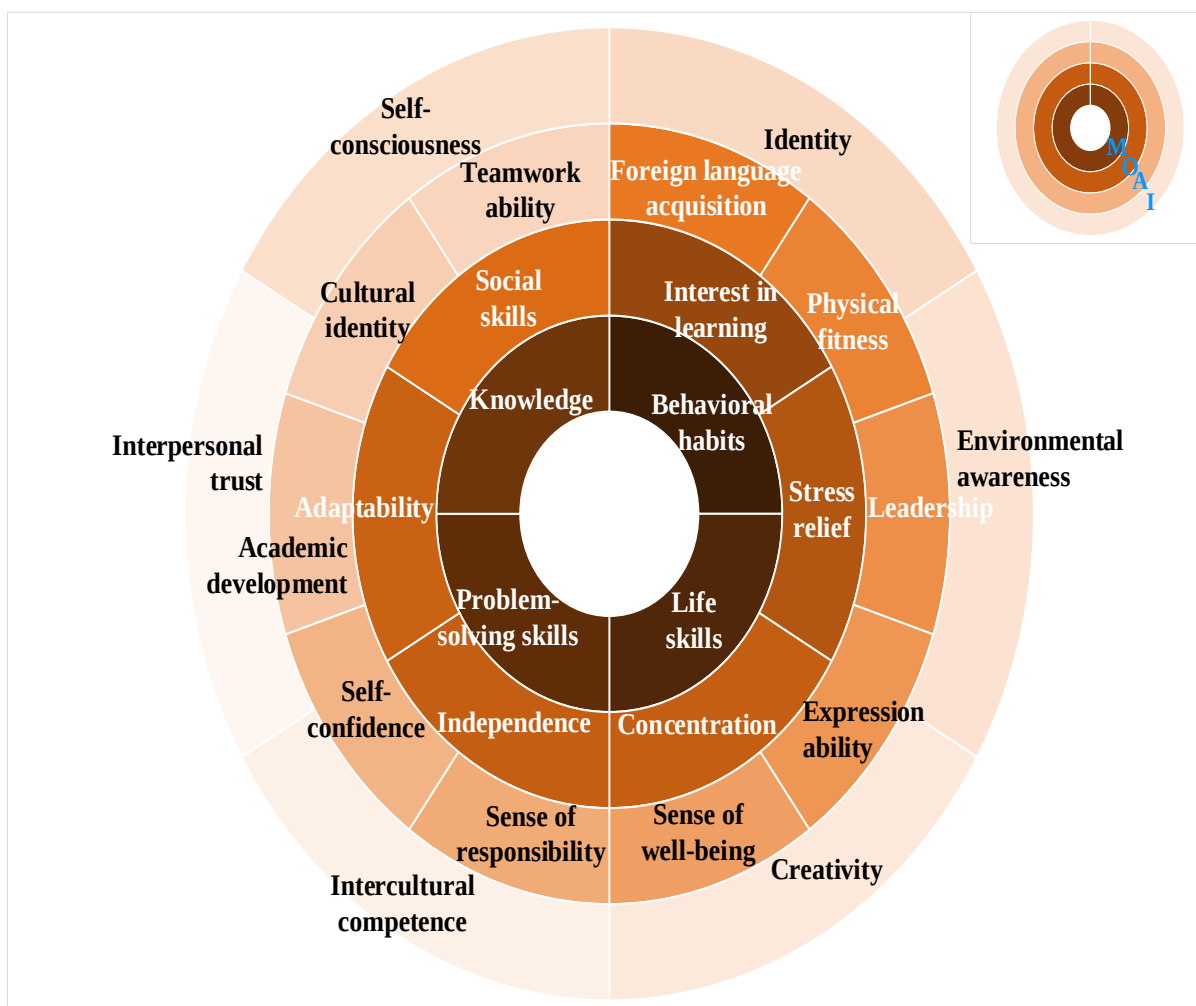


Figure 3.
Priority of parents' demands.

According to the priority order shown in Figure 2 and Figure 3, it can be seen that students have stronger affective and behavioral demands, while parents have greater demands in the cognitive and behavioral dimensions. This also verifies Chen and Ye [27] viewpoint, indicating that students prefer personal growth and entertainment experiences during study tours, while parents are more anticipating high-quality education and shaping of behavior for their children through various activities [27].

To be specific, for students, their demands for educational functions such as stress relief, leadership, self-consciousness, teamwork ability, sense of responsibility must be fulfilled first. For parents, their demands for behavioral habits, life skills, problem-solving skills, knowledge should be satisfied. On the basis of ensuring that the must-be functions are fulfilled, the one-dimensional functions should be further prioritized. For instance, students' demands for 7 functions such as adaptability, and parents' demands for 6 functions such as interest in learning. Although attractive demand is not an essential functional element, it can significantly enhance consumer satisfaction. Therefore, it can be selectively fulfilled under the cost orientation, but it should not exceed its own supply capacity. As for indifferent demand, whether it is fulfilled or not will not affect satisfaction, and it can be appropriately disregarded or postponed.

5. Conclusion

Demand research is the basis for the development and design of study tour products. As an important branch of the tourism industry, study tours occupy an important position in China's tourism market. The exploration of educational functions is precisely the premise and purpose of the development of study tour products. Therefore, this study holds significant theoretical and practical implications. Theoretically, it investigates consumers' preferences for the educational functions of study tour products from a demand-oriented perspective, thereby addressing the gaps in "demand-side" research. By focusing on understudied groups such as students and parents as research subjects, the study compensates for the underrepresentation of their roles and the marginalization of their demands in existing literature. In terms of practical contributions, the findings provide stakeholders with a more comprehensive and precise understanding of consumers' demands for the educational functions of study tour products. This will help suppliers and intermediaries to clarify their ideas of product optimization development and suffice consumers' demands more pertinently in the process of product development, marketing and service.

This study also has certain limitations. Regarding study tours, consumers are not only concerned with the educational benefits they provide but also place significant emphasis on other attributes such as safety and expenses. Therefore, future research will further expand the scope of study to other dimensions based on exploring the educational functions of study tours. Moreover, while students and parents are key stakeholders in study tours, teachers also play an essential role by participating particular programs or activities related to curriculum. Thus, conducting in-depth research on all stakeholders is a critical issue that requires attention. In the future, we will address the shortcomings identified in this study and strive to enhance these areas.

Institutional Review Board Statement:

This study was reviewed and approved by Shandong Vocational University of Foreign Affairs with the approval number: SVUFA20240226-1, Dated February 26, 2024.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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