# English Ability, Cultural Intelligence (CQ), Personality Traits and Service Quality—The Structural Relationship

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## Abstract

*In the tourism sector, the performing arts tourism market is rising. In Taiwan, more performing arts venues are being built, not only for performances but also to draw tourists. This study used the well-known tourist destination National Kaohsiung Center for the Arts (also known as "Weiwuying") as the research site. Weiwuying is an international venue, thus the professionalism and level of service provided by the staff merit discussion. This study investigated the personality characteristics, cultural intelligence, and English proficiency of the Weiwuying front-line workers. This study also examines visitor satisfaction and service quality. An online questionnaire served as the data collection tool for the study, which used the quantitative technique as its research strategy. Information was gathered from clients who possess visited Weiwuying. For the analysis, a sample size of 376 was used. In this study, the measurement and structural model were examined using Smart PLS 4.0. The study found that personality attributes and English proficiency have an impact on service quality. Customer happiness is influenced by service quality. However, the impact of cultural intelligence on service quality is minimal. The study also made recommendations for additional research and examined its theoretical and practical implications.*

**Keywords:** *English ability; cultural intelligence (CQ); personality traits, service quality; visitors' satisfaction.*

## Introduction

Today's tourist business is experiencing tremendous growth in the performing arts sector. The local economy can be gained from performing arts and draw tourists (Hughes, 2000; Kabanda, 2014). Taken Korea as an example, studies of Lim and Bendle (2012) as well as Park and Petrick (2016) have shown that the advantages to the tourism industry were indeed improved by the tourist-oriented entertainment shows there. Because of the creative and distinctive qualities of performing arts, tangible tourist attractions cannot offer audiences personal and participatory experiences at a given time like those provided by performing arts (Lim & Bendle, 2012). The market for performing arts is expanding in Taiwan (Chang, 2013). In recent years, Taiwan has erected numerous venues for the performing arts, including music and theater.

The largest performing arts complex with a single roof in the world, the National Kaohsiung Center for the Arts (Weiwuying), opened its doors in October 2018 (Smith, 2018). According to the official data, this performing arts facility attracts more than 3.8 million visitors in one year (Weiwuying, 2019). Additionally, it was included in Time Magazine's 2019 list of the World's 100 Greatest Places (Time, 2019); the New York Times referred to it as a "living room for culture" (Horton, 2019). In fact, it is believed that the only person ready to visit the arts centers are those who are engaged in performing arts. Weiwuying, however, draws people to Kaohsiung City not only for performances but also as a new tourism destination. In the two years between 2018 and 2019, there are expected to be 3.8 million visitors, and more than 290,000 tickets are sold during this time. It can be deduced that not all visitors are here for shows based on the correlation between visitor numbers and tickets sold. According to the official data of the National Theater & Concert Hall, from 2013 to 2019, the box office in south-central Taiwan increased by 41% (Chen, 2020). The number of viewers from outside of Taiwan rose, particularly after Weiwuying opened. Therefore, drawing from the data above, Weiwuying does have a positive impact on the local economy and tourism in Kaohsiung.

Given the fact mentioned above, this study aims to investigate the relationships between factors relating to front-line staff at Weiwuying, such as their English proficiency and cultural sensitivity (Chumphong & Chuai-in, 2020), as well as their personality traits (Leri & Theodoridis, 2020) and how these factors related to service quality (Tabaku & Cerri, 2016), and visitors' satisfaction (Nunkoo et al., 2020). To research the

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front-line staff elements that affect how well they serve audiences and visitors in Weiwuying, this study collected information from those who worked and were working at Weiwuying.

Previous studies have examined the relationship between English proficiency and the requirement for English skills in the tourism sector (Andrades & Dimanche, 2019; Prachanant, 2012). Additionally, research on cultural intelligence (also known as "CQ") in the tourism sector described how it is used in this sector (Jacob, 2020), which underscores the value of staff training on cultural intelligence abilities (Abdien & Jacob, 2019). Prior research also examined the connection between personality attributes and service quality (Kiffin-Petersen & Soutar, 2020); research also had been done to shed light on how staff personality traits affect customer satisfaction in the tourism industry. For instance, Kocabulut and Albayrak's (2019) study demonstrated that customer satisfaction would change depending on staff personality traits and mood. In earlier studies, the connection between personality traits and service quality was also investigated (Kiffin-Petersen & Soutar, 2020; Martin , 2023; Masrom et al., 2023). Service quality and customer happiness have been the subject of numerous literary works, including research by Ali et al. (2021) and Tabaku and Cerri (2016) which explore the relationship between customer satisfaction and service excellence in the hotel business. To the best of our knowledge, there are still no comprehensive analyses of all the constructs, which causes the research gap.

## Literature Review

### *English Ability in the Tourism Industry*

English proficiency is essential for employees to have while delivering customer service because it can create the finest travel experience (Pupo et al., 2012) and benefit the global market. The study of Ramyar et al. (2020) on the opinions of visitors towards the use of the English language revealed that knowledge of the language can be useful for managing international and cross-cultural tourist activities, which echoes Erazo et al. (2019) who found that the level of English proficiency in the tourism business should be raised after conducting interviews and group discussions with 15 participants. Vlasyuk (2020) argued that English language related courses should be converted in tourism and hospitality education.

### *Cultural Intelligence in the Tourism Industry*

Cultural intelligence (CQ) is the capacity for learning about, comprehending, and attempting to act or think in ways that are distinctive from one's own culture (Lam et al., 2021; Moon, 2010). The importance of CQ can be elucidated by the research of Abdien and Jacob's (2019) which evaluated Egyptian tourism and hospitality students about their cross-cultural competency and cultural sensitivity. They discovered that cross-cultural training had an effect on students' cultural intelligence and gave them the skills they needed for future employment.

A CQ model was created by Ang et al. (2007) which includes the following four capabilities that one is expected to equip with to accept or appreciate different cultures: CQ Action, CQ Drive, CQ Knowledge, and CQ Strategy. T According to Jacob (2020), CQ Action refers to a person's behaviors that reflect a different culture; the CQ drive refers to people's desire to learn about other cultures. CQ Knowledge refers to how much a person knows about various cultures. CQ Strategy refers to a person's method of learning about many cultures.

Abdien and Jacob (2019) assessed the cultural acuity of students studying hospitality in Egypt and Spain and the findings of their research demonstrated how cross-cultural training and overseas internship experiences affected students' CQ. Ratasuk and Charoensukmongkol's (2020) research found that in restaurant business settings, cross-cultural teams with high CQ preferred to communicate knowledge and information regularly. In Oman, Rajasekar et al. (2021) investigated the connections between the CQ of employees and their demographic features. The study revealed that workers had varied actions based on distinct CQ, which were related to demographic factors.

### *Personality Traits for the Employee in the Tourism Industry*

A well-known model called the Big Five personality traits uses five dimensions to illustrate the many and varied facets of human personality (Leri & Theodoridis, 2020; Gosling et al., 2003; Yoo & Gretzel, 2011)

The five dimensions are extraversion, agreeableness, conscientiousness, openness, and neuroticism. A person who exhibits extraversion is one who is upbeat, active, and outgoing. The terms acceptable and agreeable qualities are used to describe agreeableness. Similar in that they value social contacts and are connected to other relationships. The quality of being organized and responsible is conscientiousness. This type of person is skilled at goal setting and goal-achievement planning. The qualities of creativity and innovation are referred to as openness. People of this type enjoy trying new things and accepting a wide range of knowledge. A person with neuroticism is prone to being worried, emotional, and nervous. Another study on the personality characteristics of service workers has been discussed. The links between employees' personality qualities, client orientation, and rudeness were investigated by Kiffin-Petersen and Soutar (2020). According to the findings, employees' personality traits did directly influence how customers behaved.

*Service Quality in the Tourism Industry*

Many studies in tourism and hospitality commonly apply the service quality theory. To assess consumers' perceptions of service quality, Parasuraman et al. (1988) created the "SERVQUAL" service quality scale. The measurement's five components—tangibles, dependability, responsibility, assurance, and empathy—were developed. Environment, facilities, technology, and staff appearance are all considered tangibles. Reliability refers to demonstrating dependable service and inspiring client confidence in the business. Being responsive means providing prompt service and answering client inquiries right away. Assurance is the combination of confidence and knowledge. Empathy is the ability to provide thoughtful, individualized service.

*Hypotheses Development*

Prior research such as Ramyar et al. (2020) and Vlasyuk (2020) discuss English proficiency. There are numerous examples that show this issue in greater depth in various tourist-related industries, such as the hotel industry (Chumphong & Chuai-in, 2020), tourism, and hospitality education (Leslie & Russell, 2006). Additionally, several studies have shown that higher English proficiency is beneficial to service quality in the tourism sector. Therefore, this hypothesis is generated accordingly:

*RH1: English ability of Weiwuying's frontline staff significantly affects their service quality.*

CQ research from the past has been discussed in numerous domains such as the restaurant business and hospitality education (Abdien & Jacob, 2019; Ratasuk & Charoensukmongkol, 2020). Additionally, earlier studies (e.g., Kayran & Kamil, 2022; Lam, Cheung & Lugosi, 2022) supported the idea that staff's CQ would be advantageous on service quality they gave. Therefore, by investigating related literature as background knowledge, this research hypothesis:

*RH2: Cultural intelligence of Weiwuying's frontline staff significantly affects their service quality.*

Both Rashid et al. (2016) and Shiwen and Ahn (2023), who investigated the relationship between personality traits and frontline staff's job performance, found that personality traits influence employees' working performance in the travel and hospitality sector. Furthermore, Shaw and Choi's research (2023) delved into the big five personalities of the people working in the creative and arts industries and their work found out employees' creative performance is positively associated with personality traits of openness, extraversion, and conscientiousness. Having the background information facilitates this research's understanding of the connecting concerns regarding the personality features of frontline employees. Studies (e.g., Lee et al., 2020; Chaichi et al., 2020) that examined the relationship between personality traits and service quality indicated high correlations between employees' personality traits and service quality. According to Koller and Hicks (2016), staff personalities and service performance have a favorable correlation with customer happiness. Thus, this work advances the following research hypothesis:

*RH3: Personality traits affect service quality of Weiwuying's frontline staff.*

Chen's research (2017) into the relationship between the performing arts center's service quality and patron happiness found that patron satisfaction is positively impacted by the quality of front-of-house interactions at the national theatre and concert hall. Additionally, the study noted that offering personalized services and immediately meeting client requests are two ways to run the performing arts institution in a sustainable manner. The relationship between service quality and customer satisfaction has been extensively studied,

according to the literature reviewed (e.g., Masrurul, 2019; Nunkoo et al., 2020). This study aims to uncover the connections between English proficiency, cultural intelligence, personality, and service quality that prior research has not been able to do; as a result, the following hypothesis is developed:

*RH4: Service quality of Weiwuying's frontline staff significantly affects visitors' satisfaction.*

## Method

This study is intended to evaluate the relationship between English proficiency, cultural intelligence, personality qualities, service quality, and visitors' satisfaction in the performing arts center using survey technique as the research approach. An online survey for this study was created using Google Form. The respondents can respond to the poll whenever and wherever they like by sharing the link on social media sites like Facebook and the Line app. This facilitates efficient data collection and makes it simple to contact and access respondents (Robbins, 2017). This present research had received approval from an independent ethics committee (NCKU108-455).

*Sampling and Participants*

Purposive sampling is intended to be used by this current study, which can aid in selecting respondents who are appropriate for the study (Campbell et al., 2020). With respect to the sample size, it has been asserted the statistics would be more accurate if the sample size was more than 200 instances (Hair et al., 2009). To gather data for this study, 376 volunteers who have been the employees (full-time as well as part-time) Weiwuying are expected to participate. Among them, there were 41% men and 58.5% women. Additionally, the age group of 20 to 29 years old (36.2%), followed by 30 to 39 years old (28.8%), and then 40 to 49 years old (17.7%), made up most respondents. Please see Table 1 for the demographic information of all participants.

**Table 1.** Demographic data of participants.

| Measure | Item | Frequency | Percentage |
|---|---|---|---|
| Gender | Male | 155 | 41.0 |
| | Female | 221 | 58.5 |
| Age | Under 19 years old | 10 | 2.6 |
| | 20-29 years old | 137 | 36.2 |
| | 30-39 years old | 109 | 28.8 |
| | 40-49 years old | 67 | 17.7 |
| | 50-59 years old | 41 | 10.8 |
| | Over 60 years old | 12 | 3.2 |
| Educational level | Under the level of Senior high school | 4 | 1.1 |
| | Senior high/Vocational School or Associate's degree | 44 | 11.6 |
| | Undergraduate Student | 73 | 19.3 |
| | Bachelor/College Degree | 202 | 53.4 |
| | Master's Degree | 50 | 13.2 |
| | Doctoral Degree | 3 | 0.8 |
| Current Residency | Northern Part of Taiwan (Taipei City, New Taipei City, Yilan County, Taoyuan City, Hsinchu County, Keelung City) | 141 | 37.3 |
| | Central Part of Taiwan (Miaoli County, Taichung City, Changhua County, Nantou County, Yunlin County) | 72 | 19.0 |
| | Southern Part of Taiwan (Kaohsiung City, Chiayi County, Tainan City, Pingtung County) | 161 | 42.6 |
| | Eastern Part of Taiwan (Hualien County, Taitung County) | 2 | 0.5 |

*Data Collection*

In order to evaluate this research, this study intends to employ intensity scales in the questionnaire design. Using a 5-point Likert scale (1 being strongly disagreed with and 5 being strongly agreed with), participants are asked to indicate how much they agree or disagree with each statement in the questionnaire. One of the

scaling methods that can analyze people's attitudes and opinions for a questionnaire with closed-ended items is the Likert scale (Likert, 1932) (Nardi, 2018).

The questionnaire has three primary sections, as shown in Table 3.1. Four items in the first section measure participants' proficiency in English. Twenty things about the cultural intelligence of front-line employees are included in the second section. The final segment includes twenty-five personality characteristics of front-line employees. As for the measurements of service quality, this study asked for the participants to provide their official evaluation of their job performance and the tourists' satisfaction about their service, both of these two would be assessed on the scale of five (5 = those who received more than 2 complimentary messages from the tourists; 4 = 1 complimentary message; 3 = no complimentary message; 2 = 1 compliant message; 1 = more than 2 complain messages).

*Data Analysis*

The research would examine the research hypotheses through a two-stage procedure based on the PLS-SEM technique (Wold, 1974). The evaluation of the measurement model is the first step in determining the validity and reliability of the measurement. For evaluating reliability, Cronbach's alpha and CR were employed. As for the validity examination, convergent validity of AVE and factor loadings is evaluated (Krabbe, 2017); moreover, the Fornell-Larcker criterion and HTMT are to be checked for discriminant validity after convergent validity (Henseler et al., 2015). Additionally, this study uses bootstrapping to evaluate convergent validity and multicollinearity using the two formative conceptions of cultural intelligence and personality traits.

Structural equation modelling, which is the second stage, is used to test the research's hypotheses. Each hypothesis represents a path from a model, and in PLS-SEM, the hypothesis is first tested using the p-value. To measure the various relations on variation, the t-test is performed. Finally, the coefficient of beta value is used to determine whether the regression coefficients, which indicate beta weight and can equal the correlation, are regulated when the predictor and dependant variable are.

## Results

*Measurement Model*

In this study, Smart PLS 4.0 was utilized to analyze the questionnaire's results. Cronbach's alpha and composite reliability (CR) were assessed to assess the indicator reliability and convergent validity of this research. The benchmark is 0.70 or more (Taber, 2018). Table 4.2 demonstrates that the Cronbach's alpha and CR values for each variable were more than the threshold of >0.7. Additionally, this study checked AVE to determine the convergent validity. All measurement constructs meet the benchmark value of > 0.5, as shown in Table 2 (Hair et al., 2021).

**Table 2.** Results of indicator reliability and convergent validity.

| Measurement Constructs | Cronbach's alpha | CR | AVE |
|---|---|---|---|
| English Ability | 0.860 | 0.905 | 0.704 |
| Metacognitive CQ | 0.875 | 0.909 | 0.667 |
| Cognitive CQ | 0.876 | 0.910 | 0.669 |
| Motivational CQ | 0.868 | 0.905 | 0.657 |
| Behavioral CQ | 0.810 | 0.868 | 0.569 |
| Openness | 0.853 | 0.893 | 0.625 |
| Conscientiousness | 0.856 | 0.897 | 0.635 |
| Extraversion | 0.898 | 0.924 | 0.710 |
| Agreeableness | 0.796 | 0.859 | 0.550 |
| Neuroticism | 0.893 | 0.921 | 0.703 |
| Service Quality | 0.889 | 0.919 | 0.693 |
| Visitors' Satisfaction | 0.881 | 0.912 | 0.676 |

**Note.** CR= Composite Reliability; AVE= Average Variance Extracted

Table 3 shows the outcome of the factor loadings. According to Hair et al. (1992), factor loading average values should be more than 0.6. Only one personality attribute, neuroticism, falls below the required level.

The standard is met by additional measurement items. By calculating loadings and the Fornell-Larcker criterion, the study assessed the discriminant validity of the constructs (See Tables 4 and 5). Each construct's AVE has a larger value than the others, as shown in Table 5 (Ab Hamid, Sami, & Sidek, 2017). The formative measurement model analysis is displayed in Table 6. The table shows that the VIF 3 has no collinearity problems (Sarstedt et al., 2021). Additionally, for indicators with nonsignificant weights, significant relevance is assumed if the loadings are less than 0.50 (Sarstedt et al., 2021). The findings show that the necessary reliability and validity markers were satisfied in this investigation, as shown in Table 6.

**Table 3.** Factor loadings.

| Items | Loadings | Items | Loadings | Items | Loadings | Items | Loadings |
|---|---|---|---|---|---|---|---|
| **English Ability** | | | | | | | |
| EA1 | 0.861 | EA2 | 0.841 | EA3 | 0.819 | EA4 | 0.835 |
| **Cultural Intelligence** | | | | | | | |
| MC1 | 0.833 | COG1 | 0.777 | MOT1 | 0.801 | BEH1 | 0.650 |
| MC2 | 0.845 | COG2 | 0.774 | MOT2 | 0.795 | BEH2 | 0.688 |
| MC3 | 0.812 | COG3 | 0.841 | MOT3 | 0.859 | BEH3 | 0.785 |
| MC4 | 0.817 | COG4 | 0.854 | MOT4 | 0.740 | BEH4 | 0.824 |
| MC5 | 0.776 | COG5 | 0.827 | MOT5 | 0.801 | BEH5 | 0.804 |
| **Personality Traits** | | | | | | | |
| OPE1 | 0.890 | CON1 | 0.820 | EXT1 | 0.855 | AGE1 | 0.773 |
| OPE2 | 0.757 | CON 2 | 0.791 | EXT 2 | 0.856 | AGE 2 | 0.772 |
| OPE3 | 0.866 | CON 3 | 0.850 | EXT 3 | 0.845 | AGE 3 | 0.781 |
| OPE4 | 0.600 | CON 4 | 0.794 | EXT 4 | 0.877 | AGE 4 | 0.712 |
| OPE5 | 0.698 | CON 5 | 0.713 | EXT 5 | 0.760 | AGE 5 | 0.655 |
| NEU1 | 0.788 | | | | | | |
| NEU 2 | 0.848 | | | | | | |
| NEU 3 | 0.425 | | | | | | |
| NEU 4 | 0.922 | | | | | | |
| NEU 5 | 0.907 | | | | | | |
| **Service Quality** | | | | | | | |
| SQ1 | 0.846 | SQ2 | 0.830 | SQ3 | 0.829 | SQ4 | 0.821 |
| SQ5 | 0.835 | | | | | | |
| **Visitors' Satisfaction** | | | | | | | |
| VS1 | 0.835 | VS2 | 0.829 | VS3 | 0.838 | VS4 | 0.833 |
| VS5 | 0.754 | | | | | | |

**Table 4.** Heterotrait-Monotrait Ratio (HTMT).

| Measurement Constructs | AGR | BEH | COG | CON | EXT | EA | MC | MOT | NEU | OPE | SQ | VS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agreeableness | | | | | | | | | | | | |
| Behavioral CQ | 0.800 | | | | | | | | | | | |
| Cognitive CQ | 0.471 | 0.528 | | | | | | | | | | |
| Conscientiousness | 0.742 | 0.675 | 0.522 | | | | | | | | | |
| Extraversion | 0.529 | 0.512 | 0.610 | 0.456 | | | | | | | | |
| English Ability | 0.666 | 0.716 | 0.400 | 0.575 | 0.381 | | | | | | | |
| Metacognitive CQ | 0.696 | 0.759 | 0.437 | 0.578 | 0.327 | 0.683 | | | | | | |
| Motivational CQ | 0.564 | 0.632 | 0.742 | 0.545 | 0.798 | 0.471 | 0.468 | | | | | |
| Neuroticism | 0.193 | 0.204 | 0.120 | 0.159 | 0.330 | 0.283 | 0.169 | 0.247 | | | | |
| Openness | 0.481 | 0.405 | 0.520 | 0.481 | 0.484 | 0.277 | 0.400 | 0.568 | 0.146 | | | |
| Service Quality | 0.737 | 0.635 | 0.304 | 0.562 | 0.329 | 0.801 | 0.610 | 0.411 | 0.228 | 0.345 | | |
| Visitors' Satisfaction | 0.522 | 0.404 | 0.402 | 0.354 | 0.303 | 0.552 | 0.410 | 0.372 | 0.098 | 0.531 | 0.753 | |

**Table 5.** Fornell-larcker criterion.

| Measurement Constructs | AGR | BEH | COG | CON | EXT | EA | MC | MOT | NEU | OPE | SQ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Agreeableness | **0.742** | | | | | | | | | | |
| Behavioral CQ | 0.642 | **0.755** | | | | | | | | | |
| Cognitive CQ | 0.394 | 0.452 | **0.818** | | | | | | | | |
| Conscientiousness | 0.614 | 0.561 | 0.454 | **0.797** | | | | | | | |
| Extraversion | 0.450 | 0.448 | 0.539 | 0.403 | **0.843** | | | | | | |
| English Ability | 0.550 | 0.595 | 0.350 | 0.495 | 0.338 | **0.839** | | | | | |
| Metacognitive CQ | 0.582 | 0.640 | 0.389 | 0.501 | 0.298 | 0.593 | **0.817** | | | | |
| Motivational CQ | 0.476 | 0.547 | 0.643 | 0.474 | 0.701 | 0.415 | 0.422 | **0.810** | | | |
| Neuroticism | -0.132 | -0.136 | -0.082 | -0.139 | -0.291 | -0.256 | -0.083 | -0.214 | **0.838** | | |
| Openness | 0.432 | 0.376 | 0.453 | 0.431 | 0.437 | 0.255 | 0.378 | 0.506 | 0.015 | **0.791** | |
| Service Quality | 0.621 | 0.539 | 0.271 | 0.493 | 0.298 | 0.702 | 0.537 | 0.369 | -0.189 | 0.334 | **0.832** |
| Visitors' Satisfaction | 0.446 | 0.355 | 0.351 | 0.316 | 0.268 | 0.492 | 0.371 | 0.328 | -0.055 | 0.459 | 0.681 |

**Table 6.** Measurement model (formative).

| Constructs | Item | Weight | Loadings | p-values | T-values | VIF |
|---|---|---|---|---|---|---|
| Cultural Intelligence | Metacognitive CQ | 0.540 | 0.860 | 0.000*** | 5.113 | 1.732 |
| | Cognitive CQ | -0.098 | 0.875 | 0.303 | 1.029 | 1.770 |
| | Motivational CQ | 0.177 | 0.876 | 0.098 | 1.655 | 1.990 |
| | Behavioral CQ | 0.501 | 0.868 | 0.000*** | 4.379 | 2.026 |
| Personality Traits | Openness | 0.112 | 0.810 | 0.118 | 1.564 | 1.448 |
| | Conscientiousness | 0.249 | 0.853 | 0.003** | 2.998 | 1.724 |
| | Extraversion | -0.090 | 0.856 | 0.199 | 1.285 | 1.532 |
| | Agreeableness | 0.775 | 0.898 | 0.000*** | 11.238 | 1.784 |
| | Neuroticism | -0.179 | 0.796 | 0.006** | 2.765 | 1.130 |

**Note.** VIF < 3; Loadings ≥ 0.50; path significant at $p<0.05*$, $p<0.01**$, $p<.001***$

*Structural Model*

According to Hair et al. (2017), the evaluation of the structural model should consider the inner VIF, coefficient of determination ($R^2$), and predictive relevance ($Q^2$). Table 7 (hinged on the suggestions of Hair et al., 2011) first demonstrates that all VIF values are less than 0.5. Second, $R^2$ values greater than 0.67 are considered strong by Chin (1998). In light of this assumption, the $R^2$ for visitor satisfaction (0.463) and service quality (0.576) are regarded as moderate. Third, $Q^2$ has predictive relevance because the standard for $Q^2$ value is greater than 0 (Chin, 1998). Insufficient predictive significance is shown if the value is less than 0. Accordingly, the $Q^2$ value of service quality and both visitor satisfaction scores, 0.561 and 0.276, are predictively relevant.

**Table 7.** Results of structural model assessment.

| Constructs | VIF | R Square | Q² |
|---|---|---|---|
| English Ability | 1.868 | | |
| Cultural Intelligence | 2.425 | | |
| Personality Traits | 2.123 | | |
| Service Quality | 1.000 | 0.576 | 0.561 |
| Visitors' Satisfaction | | 0.463 | 0.276 |

**Note.** VIF<5; Q²>0

In this work, processing bootstrapping is employed to evaluate the path coefficient. English proficiency has a beneficial impact on service quality, as shown in Table 8 which supports RH1. Cultural intelligence has no bearing on the caliber of a service, as such, RH2 is not accepted. Service quality is substantially influenced by personality factors; customer satisfaction is positively correlated with service quality. Accordingly, RH3 and RH4 are accepted. According to Ringle et al. (2012), the two-stage method is required for higher-order constructions. In the initial stage, validity is examined for convergent (factor loadings and AVE), discriminant (Fornell-Larcker and HTMT), and reliability (Cronbach's alpha and composite reliability). The second stage involves evaluating the formative indicators' importance and relevance, convergent validity, multicollinearity (VIF), and loadings are greater than 0.5) (Hair, 2021). The method was shown step-by-step, and the tables above and below showed every result. To develop separate reflecting and formative models and merge them into one model at the end for findings, this research followed the literature and the PLS-SEM guidance (Hair, 2021).

**Table 8.** Results of path coefficients and hypotheses testing.

| Hypotheses | Relationship | Path coefficients | t-values | p-values | Decision |
|---|---|---|---|---|---|
| H1 | EA → SQ | 0.469 | 8.735 | 0.000*** | Supported |
| H2 | CQ → SQ | 0.058 | 0.989 | 0.323 | Not Supported |
| H3 | PT → SQ | 0.329 | 6.939 | 0.000*** | Supported |
| H4 | SQ → VS | 0.681 | 20.011 | 0.000*** | Supported |

**Note.** EA (English ability); CQ (Cultural intelligence); PT (Personality traits); SQ (Service quality); VS (Visitors' satisfaction); path significant at $p<0.05*$, $p<0.01**$, $p<.001***$

## Discussion, Implications and Limitations

*Discussion*

The results of PLS-SEM showed that English proficiency has a significant impact on service quality, which accept RH1 and supported findings of prior research (Chumphong & Chuai-in, 2020; Leslie & Russell, 2006). This suggests that in order for front-line personnel at Weiwuying which has been a renown international tourist destination, they must be fluent in English to effectively communicate with tourists from various cultural and language backgrounds. This is especially true now that there are more options to offer diversified and excellent service to foreign visitors thanks to post-pandemic international tourism.

Another important yet counterintuitive finding showed that cultural intelligence had no discernible impact on service quality, which cannot accept RH2. The behavioral CQ (.000***) and metacognitive CQ (.000***) are revealed to be significant in the results, which suggests that the Weiwuying frontline staff should possess the metacognitive and behavioral CQ since they are crucial skills to them. When dealing with visitors from different cultural backgrounds, a person's metacognitive CQ refers to their cultural consciousness and awareness (Bücker et al., 2015). Additionally, according to Ang et al. (2007), behavioral CQ is the capacity to exhibit appropriate verbal and nonverbal behavior when dealing with individuals from diverse cultures. In other words, if staff members are competent to be aware of and learn about other cultural knowledge, their service quality could be increased (Ang & Van Dyne, 2008) because they are able to demonstrate effective communication skills (Ang et al., 2007). Furthermore, results of PLS-SEM showed that personality factors had a considerable impact on service quality, as such RH3 is supported. The results show that agreeableness (0.000***) has the greatest impact, followed by neuroticism (0.006**), and conscientiousness (0.003**) comes in last. According to the research, conscientiousness, neuroticism, and agreeableness are crucial characteristics that Weiwuying's visitors associate with high-quality service.

According to the research, front-line staff should be agreeable by being kind and laid-back and by not adding to customers' tension. Second, it is advised for neurotic people to avoid showing excessive emotion and refrain from bringing personal feelings into work situations. Last but not least, being conscientious means being accountable, structured, and disciplined. The results showed that customer satisfaction is highly influenced by service quality (H4). According to earlier research (Masrurul, 2019; Nunkoo et al., 2020), the association between service quality and customer satisfaction is supported by the findings. This proves that the level of customer care provided by Weiwuying front-line workers has a significant impact on how happy visitors are.

*Theoretical and Managerial Implications*

First, this study is one of few that examines the skills of frontline staff members and the caliber of service provided by the performing arts facility in terms of theoretical ramifications. Studies of cultural intelligence (Abdien & Jacob, 2019; Ratasuk & Charoensukmongkol, 2020) are primarily discussed in the hotel sector. Chen (2017) discussed service quality and satisfaction in the encounter service at performing arts centers. Current studies of English ability (Chumphong & Chuai-in, 2020; Leslie & Russell, 2006) focused on the training side. However, prior research on the relationship between each competency and the ensuing influences hasn't specifically covered the same ground as this study. This study thereby closes the gap for subsequent investigation.

Second, the results revealed that majority have significant favorable effects. This study also demonstrated the insignificance of cultural sensitivity and service quality, indicating that most patrons are not concerned about or aware of the impact of front-line staff members' cultural sensitivity on service quality in the performing arts center. The study gave viewpoints with CQ dimensions for subsequent researchers to investigate, as Schlaegel et al. (2021) noted. This study offered some perspectives for academics who desire to investigate the same topic and anticipated further related studies concentrating on the CQ capability in the service sector of the performing arts center.

Additionally, this study offers some ideas for future researchers for investigations into the skills of employees and the caliber of their services. This research particularly concentrates on the performing arts center to improve its reputation and competitiveness, frontline workers must provide high-quality service, according to Chen (2017). The attitude of the workers and the amenities of the location were two examples

of the many service quality aspects that influenced satisfaction. Therefore, this research contributed knowledge about the varied skills possessed by front-line staff members and how they improve service quality and raise visitor happiness.

This study could serve as a guide for the sector to use when talking about practical ramifications, like improving service quality and personnel skill development. For example, frontline personnel need to be confident in all the facts when visitors ask, as Chen (2017) showed that streamlining the service process can successfully boost service quality. Additionally, being able to quickly provide personalized service is essential for meeting the needs of various guests.

Additionally, this research provides information that can help those who want to work as front-line employees at the performing arts center. Following the findings of this study, conscientiousness, neuroticism, and agreeableness are recommended for people who have a solid grasp of the big-five personality traits. Additionally, those with metacognitive and the behavioral CQ skills required for employment in a performing arts center.

Weiwuying must improve the professional aptitude of the front-line workers if it is to remain a leading international performing arts center. Providing service with professionalism and expertise demonstrates greater quality in light of the future international performances and foreign guests. As a result, our research offers insights for the sector to focus more on these problems.

This study organizes three areas of limitations and recommendations for future research. First, the results indicate that 42.6% of respondents are from Taiwan's south. Online surveys can quickly gather vast amounts of data and samples (Robbins, 2017), however it can be challenging to manage the source of samples. One of the main questions for this study is how professional frontline employees are with foreign tourists, yet there is a cap on the number of foreign responses that can be gathered. In order to ensure that the results are diverse and open to further discussion, it is advised that future researchers collect more samples and broaden their research fields.

Second, the questionnaire for this study was created with data collection from the perspective of employees in mind. Observing the tourists, the outcomes are consistent with tourists' expectations for the finest service, based on their experiences. The research would have different results based on the frontline staff's working experience, nevertheless, if data were collected from their perspective. Consequently, there would be more perspectives to consider if subsequent researchers were able to gather employee and worker perspectives.

Finally, this study's research strategy adopted the quantitative method. In other words, the study's findings can only be supported by the quantitative approach. Future studies that apply qualitative techniques, such as interviewing customers or staff members, could, nevertheless, add new views and information to the investigation.

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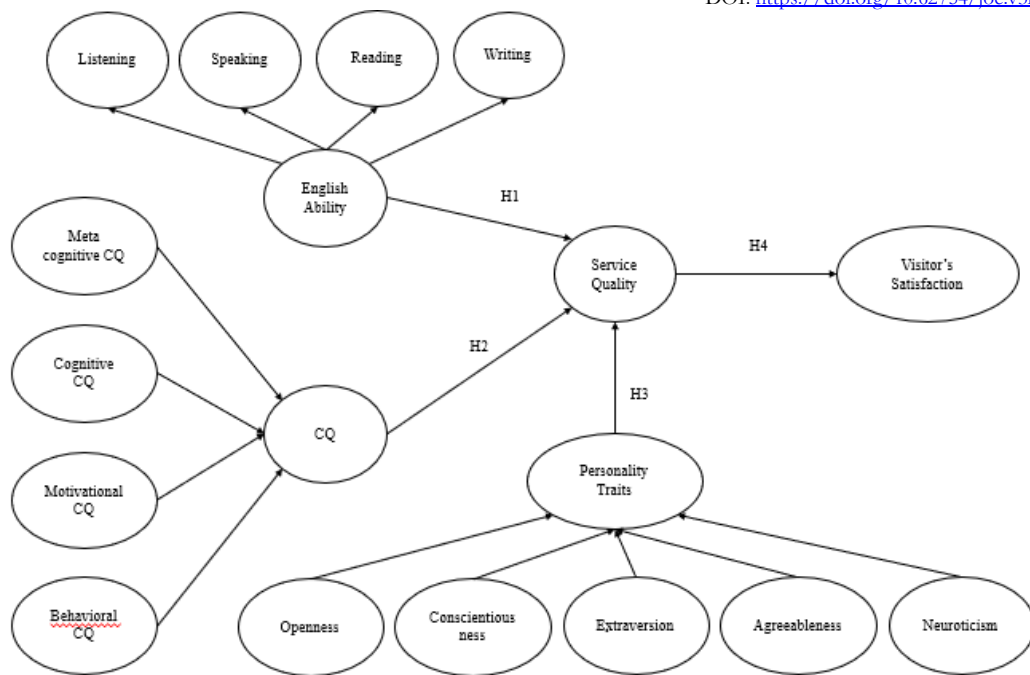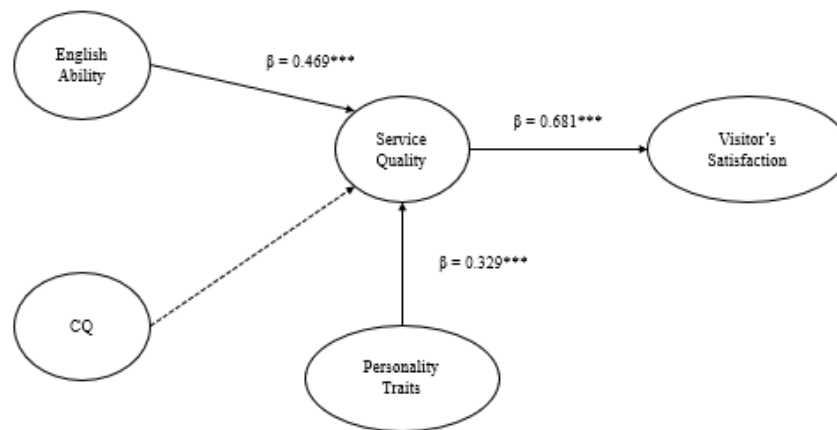
**Figure 1.** Proposed research model.



**Figure 2.**

## Appendix

Questionnaire

EA1. I believe I have good English listening comprehension ability to understand visitors' questions or inquiries.

EA2. I am able to communicate with tourists in English without difficulty.

EA3. My English reading ability is quite good.

EA4. I have no problem to write an English letter or passage.

MC1. When I interact with people from different cultures, I am aware of the cultural knowledge I use.MC2. I adjust my cultural knowledge when I interact with people unfamiliar with that culture.

MC3. When faced with cross-cultural interactions, I pay attention to the cultural knowledge I apply.

MC4. When interacting with people of different cultures, I check the accuracy of my cultural knowledge.

MC5. I consciously apply intercultural knowledge when interacting with people of different cultures.

COG1. I understand the economic systems of other cultures.

COG2. I know the rules of other languages (eg, words, grammar).

COG3. I understand the values and beliefs of other cultures.

COG4. I understand the arts and crafts of other cultures.

COG5. I understand the use of expressive body language in other cultures.

MOT1. I enjoy communicating with people from different cultural backgrounds.

MOT2. I feel confident interacting with people from unfamiliar cultures.

MOT3. I am sure I can handle the stress of adjusting to a new culture.

MOT4. I enjoy living in cultures I am not familiar with.

MOT5. I am confident in adapting to different cultural situations.

BEH1. I will meet the needs of cross-cultural interaction by changing the way of speaking (such as: accent, intonation).

BEH2. I use pauses and silences to adapt to different cross-cultural situations.

BEH3. I change my speech rate to adapt to cross-cultural situations.

BEH4. I change my body language when a cross-cultural situation requires it.

BEH5. I change my facial expressions when intercultural communication requires it.

Open1. I get excited about new ideas.

Open2. I like to think about things.

Open3. I like to hear new ideas.

Open4. I like to search for deeper meaning.

Open5. I have a rich imagination.

Con1. I will carry out the plan I made.

Con2. I am detail-oriented.

Con3. I am always prepared.

Con4. I make a plan and stick to it.

Con5. I am meticulous in what I do.

EXT1. I talk to many different people at parties.

EXT2. I feel safe in crowds.

EXT3. I am the one who always starts the conversation.

EXT4. Making friends is easy for me.

EXT5. I don't mind being the center of attention.

AGR1. I can empathize with others.

AGR2. I care about other people.

AGR3. I am respectful of others.

AGR4. I trust others to mean well.

AGR5. I believe what other people tell me.

NEU1. I get stressed easily.

NEU2. I worry about things.

NEU3. I fear the worst.

NEU4. I am suspicious.

NEU5. I panic easily.

SQ1. The service personnel at the front desk of Weiwuying provide timely and decent services.

SQ2. Weiwuying provides stable service quality.

SQ3. The service performance of Weiwuying front desk staff is appropriate.

SQ4. The front desk staff of Weiwuying are always willing to assist visitors.

SQ5. The staff at the front desk of Weiwuying are cour