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Satisfaction as a key antecedent for word of mouth and an essential mediator for service quality and brand trust in international education

Howard Stribbell^{1✉} & Somsit Duangekanong¹

Positive word of mouth in the form of recommendations and referrals is the most effective way to recruit new students. The purpose of this study was to determine how service quality, parental satisfaction, and brand trust affect the likelihood of parents recommending their child's international school to family and friends and to test the mediating effect of parent satisfaction. The study developed a contextually relevant and reliable survey to measure the perception of 458 Generation X parents at The International School of Macao. Scale items from the literature were contextualized for education. Confirmatory factor analysis was used to confirm convergent and discriminant validity. Structural equation modeling was used to determine the relationships. It was found that parent satisfaction had the biggest influence on the likelihood of parents recommending their child's international school by word of mouth. While the service quality that parents experience and the trust that they have in the school brand had an impact on satisfaction, it was found that parent satisfaction fully mediates the relationship between service quality and word of mouth as well as the relationship between brand trust and word of mouth. Schools must ensure that current parents are satisfied to cultivate positive word of mouth through recommendations and referrals to prospective parents. Previous studies have demonstrated the mediating role of satisfaction, but no significant studies have empirically tested the same in K-12 international contexts. The study contributes to the existing field of knowledge by providing support to the contention that satisfaction mediates the relationships between service quality, brand trust, and word of mouth.

¹ Assumption University of Thailand, Graduate School of Business and Advanced Technology Management, Bangkok, Thailand. ✉email: howard.stribbell@tis.edu.mo

Introduction

In an ever-increasingly competitive market, private international schools must strive for continued growth and success. School success is often measured in university acceptance and enduring school reputations, while the day-to-day reality is that a successful school has happy students and happy parents. Parents enroll their children in private international schools with the expectation that they will be able to go to elite foreign universities after graduation, but in the years before graduation, schools need to ensure that their students and parents are happy with their day-to-day experiences. However, too often, just as higher education (HE) institutions often seem to put little effort into improving students' experiences (Morgan and Rao, 2003), the same could be true about international schools. However, as Teo and Soutar (2012) pointed out, as competition for HE in Singapore increased, the need to increase the effort to improve the student experience also increased. Schools should be reminded that previous satisfaction and perceived service quality are the two key elements to acquiring a competitive advantage (Cronin et al., 2000; Zeithaml et al., 1996).

Happy parents are not only likely to remain at the school year after year, but they will also share their experiences with their friends and families. When new families move to a new city or a new country, they will ask families within their social network for their recommendations for a school for their children (Canals et al., 2019). Schools that want to keep their existing families and recruit potential new families must understand which factors influence current families to recommend the school to others. These recommendations may be face-to-face or, increasingly, online on social platforms (Chin, 2018; Poulis et al., 2019).

The current study seeks to determine which factors significantly impact the likelihood of parents to speak positively about the school and recommend the school to others. The current study will explore Generation X parents' perceptions at The International School of Macao (TIS) based in Macau SAR, China. TIS started in 2002 to offer an additional international education option for the anticipated growth in Macau due to the rapidly expanding gaming market. The school grew from 58 students in 2002 to 1458 in 2021. As an independent start-up entering a market with established competitive schools, TIS created its brand and relied on meeting the needs of its students and parents to establish and grow the school. As such, this school community is a good context to conduct this research.

Parents of international schools span multiple generations. This study investigated the perceptions of Generation X parents. Generation X parents are born between 1965 and 1980 and, compared to the Baby Boomer generation, may be more interested in their own children's competitive development (Howe, 2010). Expecting schools to be run like businesses, they may judge the cost of a private school to be based on the apparent value (Howe, 2010). As such, Generation X parents exhibit unique characteristics worthy of studying specifically. Similar studies have been conducted on Generation Y parents (Stribbell and Duangkanong, 2022c).

Research question and objectives

What impact do parental satisfaction, service quality, and brand trust have on the likelihood of Generation X parents to engage in word of mouth at The International School of Macao?

The objective of the current study was to determine the role that satisfaction, service quality, and brand trust play in impacting the likelihood of parents to recommend the school to others and to determine the role that satisfaction plays as a mediator for the impact of service quality and brand trust on referrals as well.

Literature review

Satisfaction. Schools are typically very interested in monitoring student and parent satisfaction through both internal and external processes. Satisfaction is multidimensional and often includes non-academic and academic factors in school (Friedman et al., 2007). Dissatisfied parents will lodge complaints, spread negative word of mouth and, if continued, will proceed to withdraw and find another school. The International School of Macao, as part of the Alberta Accredited International Schools (AAIS) is required to assess parent satisfaction on a variety of dimensions such as the teaching quality, variety of subjects taught, learning resources, community feeling, school culture, and student safety (Alberta and Alberta Education, 2019).

In the research, satisfaction is informed by the expectancy disconfirmation theory (McQuitty and Finn, 2000; Oliver, 1977, 1980) as the "consequence of the difference between the expected and perceived performance" (Kataria and Saini, 2019, p. 65). In service industries, customer satisfaction is a special form of customer attitude that includes a reflection on how much the customer likes or dislikes the service after experiencing it (Wu, 2011). Customer satisfaction can also be seen as an effective psychological process rather than a cognitive one (Kataria and Saini, 2019).

Since satisfaction is often the goal, it can be seen as a measurement or a signpost, hence, the research has often focussed on what influences satisfaction. As mentioned earlier, customer service has the greatest direct impact on satisfaction. However, branding can impact satisfaction including brand image (Cham et al., 2016; Sibarani and Riani, 2017) and brand trust (Saputra and Citra, 2015).

Academic research as well as commercial enterprises are interested in how satisfaction may affect customer loyalty. Customer loyalty can be defined as repurchasing, continued use, or positive word of mouth. Jain et al. (2018) were not able to establish an association between satisfaction and WOM or brand loyalty. A satisfied customer may be loyal or disloyal online or engage in WOM (Jain et al., 2018). Satisfaction is not sufficient by itself for generating WOM. However, building customer-brand relationships on social media did have a significant and positive impact on brand trust, brand loyalty, and WOM for the brand (Jain et al., 2018). The antecedents of WOM are complex and satisfaction cannot be relied upon alone. At the same time, in some unique cases, satisfaction may not even be necessary for WOM. For example, a fan of a losing football may remain loyal despite the team's performance not meeting his or her expectations. (Brzozowska-Woś, 2018).

Relationship between satisfaction and word of mouth. Satisfied parents are more likely to tell others about the school and to recommend the school to their friends and family (Athavale et al., 2015; Cham et al., 2016; Komunda and Osarenkhoe, 2012; Liu et al., 2017; Sijoria et al., 2018). This seems almost like an axiom that does not need further validation. However, this framework provides the opportunity to explore the mediating role of satisfaction. Therefore, one hypothesis for the current research is:

Satisfaction has a significant and positive impact on parents' word of mouth.

Service quality. Service quality is most often based on the expectancy disconfirmation theory (Clow et al., 1997; Gronroos, 1984; Parasuraman et al., 1985). Since expectations vary and can even change within the individual, it is difficult to measure. There are two different service quality models typically accepted in the literature. In 1985, Parasuraman and his colleagues proposed a

model for measuring service quality that consisted of five dimensions. The five dimensions were tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1985). This model and its five dimensions became known as the SERVQUAL model and has been used widely by researchers (Arasli et al., 2005; Azmi et al., 2020; Bolton and Drew, 1991; Choudhury, 2014; Jakupovic et al., 2018; Lam, 1997; Sibarani and Riani, 2017; Suciptawati et al., 2019) and specifically, to measure service quality in higher education (Barnes, 2007; Hoang, 2013; Quinn et al., 2009; Sivesan and Velnamby, 2013).

The SERVQUAL model is based on the supposition that a customer believes that have received good service when the delivered service exceeds their expectation. While Gronroos developed a model that split service quality into the technical and functional aspects of service quality itself (Gronroos, 1984; Teo and Soutar, 2012). The SERVQUAL framework has been demonstrated to be an effective tool for measuring and evaluating the service quality received by university students in higher education (Hoang, 2013; Pariseau and McDaniel, 1997; Ruby, 1998) and has recently been validated for assessing satisfaction in K12 settings (Stribbell and Duangekanong, 2022b). SERVQUAL can be used to identify individual factors, dimension factors, or as a whole construct of service quality (Souca, 2011). In this study, service quality as a whole construct is being measured.

While the perception of service quality has been measured extensively in many fields, its use in education has been limited to universities and colleges (Hoang, 2013; Quinn et al., 2009) and is not commonly used in K-12 education. In a university, the student receiving the service is also the one evaluating if the service meets their expectation (Hill, 1995). However, this is not the case in K-12 education. In K-12 education, parents as the ones who pay the fees and often make the choice on which school to attend, evaluate if the service meets their expectations. However, they may have received only some of the services directly and some of the services indirectly. This difference between university students and K12 parents is a gap that needs to be recognized. The scale items previously associated with service quality must be contextualized to the K-12 population and be based on the parent as the consumer (Stribbell and Duangekanong, 2022a).

Relationship between service quality and word of mouth. As mentioned earlier, the day-to-day experience of the parent needs to be carefully considered. Parents want to feel acknowledged and valued especially when they see themselves as part of the school community. When they feel valued and have a positive experience at the school, whether it is paying the tuition, signing up for bus service, or ordering lunches, they are more likely to tell others about their experience and to promote the school to their community (Chenet et al., 2010; Teo and Soutar, 2012). As such, the following hypothesis is proposed:

Service quality has significant and direct impact on the word of mouth of parents.

Relationship between service quality and satisfaction. The quality of a school is not just limited to its curriculum, academic achievements, university acceptances, and teacher quality. Indeed, the day-to-day service experience of the parent needs to be carefully considered. It is anticipated that the better the service experienced by the parent, the more satisfied the parent will be (Osman and Saputra, 2019). Satisfaction can be considered as the evaluation of the service provided by the school (Komunda and Osarenkhoe, 2012). While Parasuraman et al. (1985) suggested that satisfaction was a precursor to service quality, most subsequent research has shown that service quality is a significant antecedent to satisfaction (Douglas et al., 2008; Lee et al., 2000). As such, the following hypothesis was proposed:

Service quality has a significant and positive impact on satisfaction.

Brand Trust. Brand Trust can be defined as the willingness of the average consumer to rely on the ability of the brand to perform its stated function (Chaudhuri and Holbrook, 2001). Trust is fundamental in building relationships and brand marketing. Brand trust, based on positive expectations of the company, is the most influential relationship tool for a company (Ramadan, 2018).

It is understandable that brand trust would be essential for establishing a relationship and that such a relationship would have many implications for the school. Brand trust is important for establishing the consumer-brand relationship on social media (Jain et al., 2018) and plays a key role in developing the emotional connection in the consumer-brand relationship that can lead to brand satisfaction (Sreejesh et al., 2019). Brand trust has a greater impact than perceived risk on the likelihood of a consumer to write an online review (Brzozowska-Woś, 2018) and enhances brand loyalty and word of mouth (Jain et al., 2018).

Relationship between brand trust and word of mouth. In addition to service quality and satisfaction, one can assume that a parent must trust the brand to recommend it to friends and family. When it comes to something as important as a child's education, it is imperative that the parent trusts that the school will be safe, honest, and reliable. This emotional connection is necessary for WOM (Kassim and Asiah, 2010; Stojanovic et al., 2018). It is anticipated that the greater the trust in the brand, the more likely a parent will recommend the school to family and friends (Liu et al., 2017; Oraedu, 2020; Sijoria et al., 2018). Therefore, the following hypothesis was proposed:

Brand trust has a significant and positive impact on parent word of mouth.

Relationship between brand trust and satisfaction. The responsibility borne by schools towards the students in their care is a great one. Parents are rightfully concerned about the safety of their child as well as the quality of the education the child will receive at the school. In addition to the high tuition that they need to commit, they must also trust that the school will keep their child safe and be able to deliver on their educational commitments, this can be seen as brand commitment (Chaudhuri and Holbrook, 2001). It is anticipated that the more that parents trust the school, the more they will be satisfied with the school (Chen, 2017; Osman and Saputra, 2019; Saputra and Citra, 2015). As such, the following hypothesis was proposed:

Brand trust has a significant and positive impact on satisfaction.

Word of Mouth. Extensive studies have shown that WOM has a direct impact on a customer's expectations and perceived benefits which leads to a choice to purchase (Bruhn et al., 2012; Cham et al., 2016; Chong Lim and M.Y. Chung, 2014; Jalilvand et al., 2017; Riezebos et al., 2003). As a result, the customer engages in WOM after the purchase (or receiving the service) which, in turn, influences other potential customers. In this type of situation, the customer is the producer of the WOM (Blodgett et al., 1993; Jain et al., 2018; See-To and Ho, 2014). This type of behavior, or intention, is often associated with customer loyalty (Dick and Basu, 1994). Parent loyalty is similar to consumer loyalty, and has been defined previously as parents who give a positive word of mouth, recommend the school to friends and family, and encourage other parents to use the school service (Li and Hung, 2009; Zeithaml et al., 1996).

WOM happens when a customer speaks to other potential customers about their individual experiences with the company (Brzozowska-Woś, 2018). WOM can also include liking, commenting, and sharing posts as a special kind of WOM (Liu et al., 2017). Abubakar and colleagues (2016) and Farzin and Fattahi (2018) noted that the impact of WOM is directly related to the strength of the relationship between the giver and receiver. As such, WOM is a behavior of social influence.

Social influence is a common concept that people affect one another. If the person is more important to us, he or she will have more effect on us. Social influence is the extent to which a person believes that those that are close to him or her want them to make a specific decision or perform a specific behavior (Venkatesh et al., 2002). Social influence can be communicated in many ways, including through word of mouth (Abubakar et al., 2016), social networks (See-To and Ho, 2014), and online brand communities (Ozuem et al., 2021). In the present study, the goal is to identify the factors that lead to word of mouth (referrals and recommendations) by existing parents to potential parents. Social influence demonstrates why word of mouth is important to schools. As potential parents receive referrals and recommendations from friends and family that they trust, the social influence will affect their choice of school for their own children.

Satisfaction as a mediating variable. Many studies have looked at a variable's direct effect on satisfaction and the indirect effect on word of mouth. Komundo et al. (2012) found that service recovery had a direct effect on customer satisfaction and an indirect effect on WOM. Similarly, Arasli et al. (2005) found that service quality had a direct effect on satisfaction and an indirect effect on WOM. However, neither tested whether satisfaction was a partially or fully mediating variable in their models. Ali and Muqadas (2015) determined that satisfaction did act as a mediating variable in the relationship between trust and brand loyalty (of which, WOM is often a characteristic) but did not determine if there was a direct effect between trust and brand loyalty so partial or full mediation could not be determined.

Numerous studies have found that satisfaction acts as a partial mediator. Kataria and Saini (2019) found that satisfaction partially mediated between perceived quality and brand loyalty. Nam et al. (2011) found that satisfaction partially mediated the relationship between consumer-based brand equity (including 2 dimensions of service quality) and brand loyalty (defined as the consumer's intention to visit or willingness to recommend the brand). Satisfaction has been found to partially mediate between service quality and WOM (Mahadin and Akroush, 2019) and

partially mediate between service quality and student loyalty (Annamdevula and Bellamkonda, 2016).

Occasionally, satisfaction has been found to fully mediate the relationship between two other factors. Kataria and Saini (2019) found that satisfaction fully mediated the relationship between brand trust and brand loyalty. In this study, the definition of a mediating variable is that if the variable does not have a direct impact (or if the impact is not significant) but has an indirect impact, the variable is fully mediating (Hair et al., 2010).

This study seeks to determine the mediating influence of satisfaction on service quality's relationship with word of mouth. In other words, does service quality have more of a direct or indirect effect on word of mouth. Similarly, this study wants to determine whether the brand trust has more of a direct impact or indirect impact, when mediated through satisfaction, on word of mouth. In both cases, the study seeks to determine if satisfaction is a partial or full mediation. As such, the following hypotheses were proposed:

Satisfaction mediates the relationship between service quality and parent word of mouth; and satisfaction mediates the relationship between brand trust and parent word of mouth.

Research framework and hypothesis. Based on the literature above, the present study has developed the following research model to research the impact of service quality, parental satisfaction, and brand trust on word of mouth where service quality and brand trust are considered independent variables and satisfaction is considered as a mediating variable. Accordingly, the following hypotheses are proposed:

H1. Service quality has a significant and positive impact on parent word of mouth.

H2. Satisfaction has a significant and positive impact on parent word of mouth.

H3. Brand trust has a significant and positive impact on parent word of mouth.

H4. Service quality has a significant and positive impact on satisfaction.

H5. Brand trust has a significant and positive impact on satisfaction.

H6. Satisfaction mediates the relationship between service quality and parent word of mouth.

H7. Satisfaction mediates the relationship between brand trust and parent word of mouth.

To find the relationships proposed in the above hypotheses, a conceptual framework was developed by combining theoretical frameworks used in higher education settings (Liu et al., 2017; Osman and Saputra, 2019) and further supported by research in

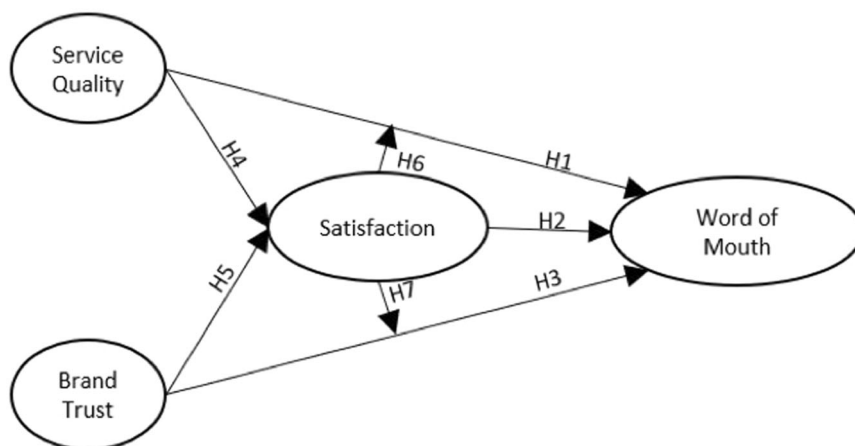


Fig. 1 The research model of antecedents of word of mouth and mediating role of satisfaction.

the airline industry (Ahmadi, 2019) and private health care (Cham et al., 2016). The resultant conceptual framework provided a model to examine the impact of the constructs and, ultimately, the antecedents for a parent to recommend the school through word of mouth as seen in Fig. 1.

Methodology. A quantitative survey was designed to evaluate parent responses through 32 items developed from scale items of previous researchers. Brand trust had four items based on Jain et al. (2018). Word of mouth had three items based on Ahmadi (2019). Satisfaction had four items based on Cham et al. (2016). Service quality had 27 scale items based on Cham et al. (2016). All the scale items were contextualized for the current study and specific industry. A five-point Likert-type scale was used for all items.

Contextualizing the survey instrument. As the original scale items were not developed for international K-12 education, they had to be contextualized. As documented previously (Stribbell and Duangkanong, 2022a, 2022b) the scale items were converted to the K-12 education context and the conversion was verified through an Item Objective Congruence test (IOC). The use of experts in the education field enabled the previous scale items to be appropriately reworded and expanded to reflect the K12 international school setting. As per the IOC, the three experts were tasked with determining the suitability of the revised construct to measure the given variable. Scale items were required to achieve a score >0.6 (majority approval) to be retained. Scale items that did not achieve this minimum were revised based on the feedback from the experts and resubmitted. The scale items for satisfaction and brand trust were straightforward to contextualize. However, the complexity of service quality required additional attention.

To contextualize service quality for the K12 education setting, the 23 service quality scale items previously used in private health and originally developed by Lam (1997) and operationalized by Cham et al. (2016) were selected based on previously demonstrated reliability. Their Cronbach Alpha value was 0.839 (Cham et al., 2016). After the IOC, the 23 items were modified and four additional items were added.

Pilot test. A sample survey was given to 99 parents and results were analyzed after 36 responses were received. The collected data from 33 acceptable responses were used to test the reliability of the survey scale items of each variable. As seen in Table 1, the results indicate that the scale items reliably measure the construct as the Cronbach Alpha value exceeds the lower limit of 0.70 as stated by Hair et al. (2010) and meets the acceptable internal consistency proposed.

Population and sampling method. Parents that were born between 1965 and 1980 are identified as Generation X and were targeted for this research as part of a larger research project targeting Generation X and Generation Y. Parents were emailed the online survey directly by the school and followed up by homeroom teachers. This teacher-based process was highly successful in getting parents to complete the survey. The survey was available in

English and Chinese. The English survey was translated into Chinese by the school’s communication staff and reviewed by the Mandarin department head. The survey was distributed using judgment sampling by emailing all parents whose children were currently enrolled in the school. Employing snowball sampling, parents were asked to forward the questionnaire to another potential participant after completing the survey.

Results

Demographic information of the sample. Of the 458 valid responses from parents, 59.4% (272) were female, 40.0% (183) were male and 0.7% (3) did not state their gender. Most respondents were married or with a partner 90.8% (416), 5.7% (26) were single and 3.5% (16) did not state their marital status. Of the respondents, 24.6% preferred not to state their monthly income, 9.6% made less than MOP25,000 per month (3132USD), 20.6% made between MOP25,001 and MOP50,000, 21% made between MOP50,001 and MOP75,000 and 14.4% made more than MOP100,000 (12,530USD) per month.

The following descriptive statistics and assessment of normality are presented in Table 2. While -2 and +2 have been suggested values for kurtosis, Mayers (2013, p. 53) states that such a value should only be used for small samples under 50 and that -3.29 and +3.29 should be used for samples larger than 100. This is especially true when considering the normality of data when the sample is larger than 300 (Kim, 2013). BT1, BT4, and SQ13 exceed the -2, +2 limits but meet the -3.29 and +3.29 limits. As such, the results are considered acceptable.

Confirmatory factor analysis. Convergent and discriminant validity of the constructs and assessment of model fit was determined using confirmatory factor analysis (CFA). To achieve a model fit, several observed variables of service quality were required to be removed. The number of observed variables decreased from 27 to 18. However, as this study is not analyzing the dimensions within service quality but rather the total construct, and the resulting Cronbach Alpha value of the 21 scale items was 0.958, the reduction is acceptable.

Four criteria should be used to test convergent validity as suggested by Hair et al. (2010). These four criteria include: the construct reliability (Cronbach Alpha value) should be >0.7; the explained variance (AVE) within each construct should be larger than 0.5; the standardized factor loading of each observed variable to the latent construct should be at least 0.60; and the composite reliability (CR) should be at last 0.70. The requirements of these four criteria were met and are listed in Table 3. The factor loading of the observed variables was greater than the recommended minimum of 0.6. The Cronbach Alpha values are above the minimum of 0.7. The AVE values exceeded the recommended minimum value of 0.5. The CR values exceed the minimum of 0.7. As the four criteria have been exceeded convergent validity has been achieved.

The heterotrait-monotrait ratio of correlations (HTMT) method (Henseler et al., 2015) was used to test the discriminant validity of the data and construct. Discriminant validity assesses the statistical variation between the constructs. Discriminant validity can be assessed by examining the correlations of indicators across all of the constructs compared to the correlations of indicators within a construct. If the correlation ratio is below 0.9, then discriminant validity exists (Hair et al., 2021; Henseler et al., 2015). The HTMT values were calculated using the HTMT plugin by (Gaskin et al., 2019) in AMOS. The correlation ratios between all variables are below 0.9 as listed in Table 4. As a result, discriminant validity was achieved. Since convergent and discriminant validity was achieved, construct validity was determined.

Table 1 Reliability value of each construct after pilot test.

Variable	Number of items	Cronbach Alpha
Brand Trust	4 items	0.800
Service Quality	27 items	0.956
Satisfaction	4 items	0.952
Word of Mouth	3 items	0.919

Table 2 Mean, standard deviation and assessment of normality.

Construct	Item	Mean	Std. dev.	Kurtosis	Std. error	Skewness	Std. error
Brand trust	BT1	4.16	0.676	-0.842	0.114	2.202	0.228
	BT2	3.92	0.740	-0.528	0.114	0.870	0.228
	BT3	4.24	0.698	-0.685	0.114	0.645	0.228
	BT4	4.07	0.745	-0.950	0.114	2.260	0.228
Service quality	SQ1	4.10	0.680	-0.378	0.114	0.057	0.228
	SQ2	4.19	0.681	-0.514	0.114	0.180	0.228
	SQ3	4.12	0.654	-0.502	0.114	1.042	0.228
	SQ4	4.16	0.621	-0.502	0.114	1.513	0.228
	SQ5	4.08	0.662	-0.311	0.114	0.079	0.228
	SQ6	4.09	0.683	-0.611	0.114	1.116	0.228
	SQ7	4.06	0.632	-0.411	0.114	0.805	0.228
	SQ8	4.08	0.717	-0.724	0.114	1.330	0.228
	SQ9	4.24	0.539	-0.225	0.114	2.205	0.228
	SQ10	4.11	0.601	-0.292	0.114	0.699	0.228
	SQ11	4.18	0.679	-0.707	0.114	1.291	0.228
	SQ12	4.33	0.562	-0.097	0.114	-0.664	0.228
	SQ13	4.36	0.661	-1.057	0.114	2.502	0.228
	SQ14	4.29	0.635	-0.590	0.114	0.609	0.228
	SQ15	4.19	0.650	-0.492	0.114	0.827	0.228
	SQ16	4.24	0.590	-0.243	0.114	0.185	0.228
	SQ17	4.16	0.655	-0.641	0.114	1.479	0.228
	SQ18	4.35	0.596	-0.306	0.114	-0.666	0.228
	SQ19	4.32	0.606	-0.471	0.114	0.329	0.228
	SQ20	4.25	0.646	-0.590	0.114	0.675	0.228
	SQ21	4.20	0.631	-0.400	0.114	0.336	0.228
	SQ22	3.88	0.757	-0.184	0.114	-0.276	0.228
	SQ23	4.06	0.768	-0.683	0.114	0.875	0.228
SQ24	3.87	0.749	-0.347	0.114	0.105	0.228	
SQ25	4.09	0.683	-0.528	0.114	1.072	0.228	
SQ26	4.04	0.761	-0.602	0.114	0.589	0.228	
SQ27	3.82	0.787	-0.321	0.114	0.165	0.228	
Satisfaction	SAT1	4.20	0.717	-0.886	0.114	1.635	0.228
	SAT2	4.15	0.738	-0.698	0.114	0.839	0.228
	SAT3	4.08	0.708	-0.707	0.114	1.383	0.228
	SAT4	4.20	0.741	-0.854	0.114	1.206	0.228
Word of mouth	WOM1	4.26	0.678	-0.711	0.114	0.952	0.228
	WOM2	4.19	0.739	-0.751	0.114	0.849	0.228
	WOM3	4.10	0.783	-0.539	0.114	0.045	0.228

To determine model fit, the statistical measures suggested by Hair et al. (2010) were used. These criteria included chi-square fit statistics over degrees of freedom (CMIN/DF), the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), comparative fit index (CFI), Tucker-Lewis index (TLI) and root mean square error of approximation (RMSEA). To determine good model fit, the research model must meet or exceed the following criteria: CMIN/DF >5; GFI >0.85; AGFI, NFI, CFI, and TLI >0.8; and REMSEA <0.08. The current research model exceeded every criterion and achieved an acceptable model fit as shown in Table 5.

Factor loading. Given construct validity and acceptable model fit, a structural equation model was developed to determine the standardized path coefficients including direct effect, indirect effect, and total effect of the constructs. As the SEM had the same model fit values as the measurement model (previously reported in Table 6), no further modifications to the SEM were necessary. Thus, the model can be considered valid (Hair et al., 2010). The standardized direct and indirect effects were reported by the AMOS software and the total effect was calculated. The results are reported in Table 6 and are discussed in the following section.

A structural equation model was developed through the AMOS software. The model demonstrated that not only does satisfaction have the greatest impact on word of mouth, but it also acts as a



Fig. 2 Illustrated structural equation model with direct and indirect effects. Solid lines indicate $p < 0.05$, dashed lines indicate $p > 0.05$.

mediator for the direct impact of service quality and brand trust on word of mouth. Figure 2 displays the mediating effect of satisfaction.

Satisfaction was found to be a fully mediating variable for service quality and brand trust. Using 95% bias-corrected bootstrapped confidence intervals in AMOS, the significance level of the indirect effects was checked. The significance result and moderation results are shown in Table 7. As there was no direct effect but there is an indirect effect, then satisfaction is found to be fully mediating.

Table 3 Convergent validity assessment.

Variables	Factor loading	t-value	CR	AVE	Cronbach Alpha
Brand Trust (BT)			0.868	0.623	0.853
BT1	0.854	-			
BT2	0.735	19.400			
BT3	0.687	17.594			
BT4	0.854	24.754			
Service Quality (SQ)			0.958	0.563	0.958
SQ3	0.764	-			
SQ4	0.697	19.500			
SQ5	0.685	16.077			
SQ6	0.833	20.281			
SQ7	0.823	19.977			
SQ9	0.722	17.067			
SQ10	0.666	15.572			
SQ11	0.715	16.879			
SQ12	0.684	16.044			
SQ13	0.774	18.565			
SQ15	0.782	18.784			
SQ16	0.849	20.674			
SQ17	0.849	20.784			
SQ18	0.738	17.519			
SQ19	0.661	15.415			
SQ20	0.811	19.621			
SQ26	0.739	17.549			
SQ27	0.665	15.532			
Satisfaction (SAT)			0.952	0.832	0.924
SAT1	0.901	-			
SAT2	0.927	34.344			
SAT3	0.891	30.940			
SAT4	0.929	34.587			
Word of Mouth (WOM)			0.925	0.804	0.881
WOM1	0.866	-			
WOM2	0.947	31.069			
WOM3	0.874	26.713			

Table 4 HTMT analysis of the current study.

	SQ	SAT	BT	WOM
SQ				
SAT	0.804			
BT	0.894	0.832		
WOM	0.751	0.879	0.779	

Table 5 Model Fit Criteria and values for the current study.

Index	Acceptable values	Statistical values
CMIN/DF	<3.00 (Hair et al., 2010)	2.729
GFI	≥0.85 (Sica and Ghisi, 2007)	0.870
AGFI	≥0.80 (Sica and Ghisi, 2007)	0.844
NFI	≥0.80 (Wu and Wang, 2006)	0.927
CFI	≥0.80 (Bentler, 1990)	0.952
TLI	≥0.80 (Sharma et al., 2005)	0.946
RMSEA	<0.08 (Pedroso et al., 2016)	0.059
Model summary		Acceptable Model Fit

Discussion

In general, the main objective of this study was to investigate the influence of service quality, satisfaction, and brand trust on parents’ word of mouth in a K-12 international school in Macau, China SAR. The findings demonstrate that satisfaction has the greatest impact on word of mouth and fully mediates the

relationships that brand trust and service quality have on word of mouth. As such, parent satisfaction plays an essential role in leading to school referrals and recommendations by existing parents. The impact of these variables and the proposed hypotheses are shown in Table 8 and discussed below.

Influence of service quality on parent word of mouth. This study did not find that service quality had a significant and direct impact on word of mouth by parents. As such, H1 was not supported. This finding does not support the findings of Chenet et al. (2010) directly but like Chenet, the impact of service quality on word of mouth was stronger indirectly than directly. At first, these findings seem counterintuitive. If a parent receives positive service quality, one expects them to tell others. However, without overall satisfaction with the school, a positive service experience at the school may not be sufficient for a parent to recommend the school.

Influence of satisfaction on parent word of mouth. The current study found that satisfaction had a significant and direct impact on parent word of mouth. As such, H2 was supported. Satisfaction had the greatest total effect on word of mouth indicating that it plays an essential role in leading to referrals and recommendations from existing parents. This supports the previous research where satisfaction had a significant impact on word of mouth (Cham et al., 2016; Komunda and Osarenkhoe, 2012; Liu et al., 2017; Sijoria et al., 2018) and is seen as part of loyalty behavior (Athavale et al., 2015).

Table 6 Direct, indirect and total effect of the constructs of the present study.

	SAT				WOM			
	Direct	Indirect	Total	R ²	Direct	Indirect	Total	R ²
BT	0.446	-	0.446	0.724	0.091	0.342	0.433	0.767
SQ	0.428	-	0.428		0.037	0.328	0.365	
SAT	-	-	-		0.767	-	0.767	

Table 7 Direct, indirect and mediating result.

Hypothesis	Direct effect	Indirect effect	Result
SQ → SAT → WOM	0.037 (ns)	0.328***	Full moderation
BT → SAT → WOM	0.091 (ns)	0.342***	Full moderation

***p < 0.001

Table 8 Hypotheses results.

Hypothesis	Causal relationship	Std. loading and significance level
H1	SQ → WOM	Rejected (0.037, 0.642)
H2	SAT → WOM	Supported (0.767, ***)
H3	BT → WOM	Rejected (0.091, 0.295)
H4	SQ → SAT	Supported (0.428, ***)
H5	BT → SAT	Supported (0.446, ***)
H6	SQ → SAT → WOM	Supported (0.328, ***)
H7	BT → SAT → WOM	Supported (0.342, ***)

***p < 0.001.

Influence of brand trust on parent word of mouth. This study did not find that brand trust had a significant and direct impact on parent word of mouth. Based on this, H3 was not supported. Similar to the previous result with service quality, this result was also unexpected. It may highlight the difference between brand trust and trust in the specific school experience. Many of the scale items of service quality attempted to measure the perceived trust of parents on teachers and school staff and this may have caused some confusion between relational trust and brand trust. It may also have overlooked the emotional connection that is required for loyalty behavior such as word of mouth (Liu et al., 2017) or the relationship value that is a key antecedent of the impact of trust on word of mouth (Oraedu, 2020). However, it is clear that when parents are satisfied then brand trust does have an impact on word of mouth. This suggests that trust in the brand itself is not sufficient, trust must be experienced and relational similar to Jain et al. (2018) emphasis that trust is necessary to build consumer-brand relationships.

Influence of service quality on parent satisfaction. This study found that service quality had a significant and direct effect on parent satisfaction. Based on this, H4 was supported. Service quality, like satisfaction, is a measure of the difference between expected results and actual results. When a parent receives a service that is lower than they expected, they perceive it as being poor service or lower quality of service. Good service quality when a parent complains can lead to parent satisfaction (Komunda and Osarenkhoe, 2012). When a parent receives a service that is higher than they expected, they perceive it as good service or higher quality service. This expectancy confirmation applies to satisfaction as well (Clow et al., 1997). When parents' expectations are met or exceeded, they are more likely to be satisfied.

Influence of brand trust on parent satisfaction. The current study found that brand trust had a significant and direct impact on parent satisfaction as previously shown by Kataria and Saini (2019). As such, H5 was supported. Somewhat surprisingly, the brand trust had a greater impact on satisfaction than the impact of service quality on satisfaction. This would suggest that confidence in the brand is more important than the actual service quality experienced, though both are important and lead to satisfaction and, indirectly, lead to school recommendations and referrals. The greater the impact that trust has on satisfaction (Chen, 2017; Osman and Saputra, 2019), the greater the effect on word of mouth.

Satisfaction mediates the relationship between service quality and word of mouth. The current study found that satisfaction fully mediates the impact that service quality has on parent word of mouth. As a result, H6 was supported. While service quality's direct impact on word of mouth was not significant (0.078, P = 0.279) it did have an indirect effect when mediated through satisfaction and a total effect of 0.326. As Hair et al. (2010) state, when a variable has no direct impact but has an indirect impact, then it is a fully mediating variable. Unlike previous studies in higher education where satisfaction partially mediated the relationship between service quality and word of mouth (Mahadin and Akroush, 2019), this study found that satisfaction fully mediated the relationship. This finding underscores the importance of parents receiving positive service and being satisfied with the school. Correctly handling a complaint can increase satisfaction and decrease negative word of mouth (Komunda and Osarenkhoe, 2012). One could see that service quality may be a short-term incidental experience, but satisfaction is a longer-term emotional relationship and thus, satisfaction is essential to having a parent recommend the school through word of mouth.

Satisfaction mediates the relationship between brand trust and word of mouth. The current study demonstrated that satisfaction fully mediates the effect that brand trust has on parent word of mouth. Accordingly, H7 was supported. When mediated by satisfaction, the total effect on word of mouth is significant at 0.473. This is a big enough impact to suggest that school leaders should continue to build brand trust while ensuring their parents are satisfied so that those parents will recommend the school to others. These findings are similar to previous studies that found that satisfaction fully mediated the relationship between brand trust and brand loyalty (Kataria and Saini, 2019). As Liu et al. (2017) discovered, trust led to word-of-mouth intention but only satisfaction led to word-of-mouth engagement (Liu et al., 2017). The importance of satisfaction cannot be overstated.

School leadership implications. The findings of this study have a significant influence on the strategic development of schools. Unsurprisingly, parent satisfaction has the greatest impact on the parent's likelihood to recommend the school and the school leadership must be sure to carefully measure parent satisfaction while also finding ways to improve the same. Improving the experience of the service received by the parents may not have a

significant effect on referral rates but it will improve the satisfaction levels of parents. The multiple dimensions of service quality should also be carefully considered to maximize the impact. The modified service quality instrument can be used by K12 schools to reliably measure the perceived service quality received by parents and can be further analyzed to determine the effect of service quality (Stribbell and Duangekanong, 2022b). Similarly, increasing parent trust in the brand of the school may not lead directly to increased referrals but will increase parent satisfaction which will lead to increased referrals. This has been demonstrated in Generation Y parents (Stribbell and Duangekanong, 2022c) as well as in the Generation X parents of the current study.

While many schools focus solely on measuring parent satisfaction and may apply ad hoc endeavors to try to address dissatisfaction, this study further demonstrates that improving service quality and brand trust will further enhance the satisfaction of parents. While more research is needed to identify more of the antecedents of parent satisfaction, school leadership would do well to start by improving the service quality and brand trust of the school.

Limitations and further research. As the current study was limited to just Generation X parents at one international school, more research would be needed to see if the results are verified at other schools and with other generations of parents. The modified scale items should be further tested for reliability in other K-12 international settings. Further studies will enable greater contextualization of the scale items. Schools will also benefit from additional research that explores which other factors impact satisfaction and word of mouth.

Given the role that satisfaction has had on word of mouth directly and indirectly through the mediation of brand trust and service quality, it would be appropriate to determine additional antecedents of parent satisfaction and the extent, if any, that satisfaction might play as a further mediating role on increasing word of mouth.

Further research should be undertaken to explore how service quality in schools compares with service quality dimensions in other industries in an attempt to create a more specific model for education. In addition, further research into the nature of trust in schools is warranted as there appears to be some ambiguity between brand trust, relational (service) trust, and, potentially, professional trust.

The development of a contextually relevant and statistically reliable instrument that is meaningful for schools for measuring service quality, satisfaction, and brand trust should also be tested in additional schools and further verified or further refined.

Conclusion

This empirical study is the first to examine the influence of service quality, satisfaction, and brand trust on the word of mouth behavior in the K-12 international school industry. The study also identified the mediating role of satisfaction in the relationships between brand trust on word of mouth, and service quality on word of mouth. While some research has been done in higher education regarding service quality, brand trust, satisfaction, and word of mouth; there remains a significant gap in research conducted in K-12 education. As the first study in this specific context, it required modification and contextualization of the scale items to develop a reliable instrument to measure service quality, satisfaction, brand trust, and word of mouth in the unique context of parents in K-12 schools.

This study demonstrated that satisfaction had the greatest direct impact on parents' word of mouth (0.767) while the impact

of brand trust and service quality was not significant. This suggests that experiencing positive service quality or perceiving trust in the school brand is not sufficient for parents to recommend the school. However, when mediated through satisfaction, brand trust had a significant total effect (0.433) on word of mouth, and service quality had a smaller but still significant total effect (0.365) on word of mouth. As such, satisfaction can be said to fully mediate the relationship. This finding is highly important for school leaders who must ensure that parents are satisfied with the school. It suggests that improving service quality and brand trust will positively improve satisfaction which, in turn, will improve parents' likelihood to recommend the school. However, if a parent is not satisfied with the school, better service quality or greater brand trust will not be sufficient to encourage parent referrals.

Data availability

The raw data used for this study is available upon request.

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Competing interests

The authors declare no competing interests.

Ethical approval

Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. The instruments and methodology were reviewed and approved by the institution's proposal defense committee for the Graduate School of Business and Advanced Technology Management at Assumption University.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Additional information

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Correspondence and requests for materials should be addressed to Howard Stribbell.

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