

Child Safety in Malaysian Water Theme Parks: Perspectives from Family Tourism

Nur Alya Sofiah Ismail¹ Mazni Saad^{2*}

^{1,2}Department of Tourism Management, Kulliyyah of Sustainable Tourism and
Contemporary Languages, International Islamic University Malaysia

nuralyasofiah@gmail.com

maznisaad@iium.edu.my

*Corresponding author: maznisaad@iium.edu.my

ABSTRACT

As family travel gains popularity, it is a top priority for parents to have a safe and enjoyable travel experience for their children. In Malaysia, destinations with water facilities are highly sought after due to the nation's tropical climate. Yet, most family destination attractions, especially theme parks, are struggling to upkeep good standards of safety. Although there has been greater emphasis on safety, there are still difficulties in ensuring theme parks translate measures into being child-friendly. One of the significant challenges lies in identifying suitable respondents in the form of parents who visit water theme parks with their children. Additionally, there is limited research on the consistency of safety measures at different locations, making it a critical requirement to analyze best practices and find areas that need improvement. The objective of this research is to evaluate the level of child safety practices at kids zones currently implemented in water theme parks. The quantitative research approach is employed through online surveys on parents and guardians who have taken children to water theme parks. Family travel networks partnership guarantees a relevant and varied sample. The research assesses the enforcement of safety protocols designed for children and examines how they can be developed to provide a better overall travel experience. The findings have theoretical and practical implications. The study provides insights for tourism stakeholders, evidence-based suggestions for policymakers, and helps parents make informed decisions on safe, children- friendly travel experiences. Future research could consider longitudinal studies.

Keywords: Child safety; Family tourism; Safety measures; Tourism policy; Water theme parks

1. INTRODUCTION

Malaysia's water theme parks have experienced significant growth in popularity, with visitor numbers rising steadily over the past decade, contributing to Malaysia's emergence as a key theme park destination in Southeast Asia (The Edge Malaysia, 2023). In Malaysia, water theme parks are especially popular among children, particularly during school holidays and group outings like school trips (Ting & Tan, 2017; The Edge Malaysia, 2023). Parks such as Legoland Malaysia, Sunway Lagoon, and A'Famosa attract families with their interactive water attractions. These visits often include parents, guardians, or teachers, which raises concerns about whether one guardian can effectively supervise multiple children at once. As a result, child safety is a top priority. This highlights the need for clear safety measures and child-friendly facilities (Wong & Cheung, 2019; Sadeghloo et al., 2024). Family tourism has become a growing global segment. It offers unique leisure, educational, and bonding experiences for parents and children at destinations like Disneyland in the United States, Legoland in Europe, and Universal Studios in Asia. These places are designed to accommodate both adults and children, providing suitable facilities, lodging, and activities (Wong & Cheung, 2019; Albayrak et al., 2021;)

However, inconsistent safety measures, such as unbalanced monitoring and unclear policies, have raised concerns among parents. This directly affects their satisfaction and confidence in these destinations (Lee & Thompson, 2007; Wong & Cheung, 2019). The travel industry, especially family-based tourism, has grown significantly over the years. The safety of children has become a major concern for parents when picking travel destinations (Kim & Ko, 2012). For many parents, ensuring their children's safety is a key factor in selecting recreational spots. Beyond fun and relaxation, family outings need to provide peace of mind, especially in high-risk environments like water parks. Parents worry not only about physical safety, such as drowning or injury, but also about emotional well-being in crowded or unfamiliar places (Bigné et al., 2005; Sadeghloo et al., 2024). A destination with clear safety procedures, visible staff, and designs focused on children helps parents feel more confident in managing their kids, especially during group visits or when supervising multiple children alone.

In Malaysian water theme parks, families prefer these venues because of the tropical climate. However, inconsistent child safety practices have become a key issue. Parents see different levels of safety enforcement, especially in children's areas. This inconsistency leads to dissatisfaction and decreases trust in these locations (Wong & Cheung, 2019). Although many parks offer safety features, the lack of uniformity among them creates confusion and potential risks.

Safety in theme parks goes beyond just preventing physical injuries. Parents are also concerned about their children's emotional and psychological well-being, especially in crowded and unfamiliar places. Unfortunately, current safety practices often do not address these softer aspects, which highlights a gap in comprehensive child-centered protection (Bigné et al., 2005). Moreover, there is limited research on whether safety measures are applied consistently across Malaysian water parks. This makes it harder to improve safety standards. Without clear guidelines or best practices, operators and policymakers struggle to ensure the quality and effectiveness of the current safety systems (Wu et al., 2018). Therefore, evaluating current child safety practices, particularly in children's areas, is both timely and necessary. This evaluation can help identify weaknesses and support improvements that boost parental trust and enhance children's overall safety.

The objective of this study is to evaluate the level of child safety practices currently implemented in kids' zones at water theme parks in Malaysia. This research aims to look at how well these safety measures address the needs of young visitors. It will also evaluate their effectiveness in providing a safe environment and explore how they affect parental trust and satisfaction. The findings should reveal current strengths and point out areas that need improvement. This will help create safer and more child-friendly recreational spaces in Malaysia's tourism industry.

2. LITERATURE REVIEW

Recent studies show that more attention is being paid to child safety in water theme parks. This focus is part of the bigger picture of family tourism. The research helps us understand important factors like safety measures, family-friendly facilities, and risk management in water attractions (Bertolucci, 2022; Sadeghloo et al., 2024). As water theme parks become more popular, especially in tropical areas like Malaysia, addressing safety concerns for children is increasingly important. In Malaysia, well-known places like Legoland Malaysia, Sunway Lagoon, and Genting Highlands have seen a steady rise in family visitors. This growth is due to investments in attractions that cater to families (Abdul- Rahim et al., 2017; Ting & Tan, 2017). Parents now look for more than just fun. They want places that focus on child safety by providing kids' zones, visible staff, emergency plans, and well-thought-out park layouts.

2.1 Family Tourism Theory

Family Tourism Theory offers a way to understand how families pick travel spots that meet their enjoyment and children's developmental needs. Developed in the early 2000s, the theory emphasizes the need for inclusive spaces that promote bonding, learning, and psychological well-being for every family member (Tseng et al., 2024). Applying this theory, scholars argue that safety measures tailored to children are central to a family's

travel decision-making process. Research shows that parental trust is strongly influenced by how visible and consistent safety features are ranging from child-tracking systems and clearly designated areas to staff trained in child-friendly communication (Sadeghloo et al., 2024; Wong & Cheung, 2019). In water theme parks, where physical risks such as drowning or injury are higher, the alignment of safety infrastructure with child-centered values from Family Tourism Theory becomes especially relevant. Moreover, Child Safe Tourism Principles complement this framework by promoting safety standards that go beyond physical hazards to include emotional reassurance. For instance, mascots, colorful signage, and soft play environments are not just decorative they provide psychological safety, reduce fear, and enhance the overall experience for both children and parents (Bertolucci, 2022).

2.2 Dimensions of Family Tourism Theory

Family Tourism Theory provides insight into how families choose travel destinations and evaluate their experiences. The theory shows that travel decisions are impacted by leisure, as well as the need for safety, bonding, and growth opportunities for children (Tseng et al., 2024). These factors are particularly significant in locations like water theme parks, where enjoyment and child safety are key considerations. Family Tourism Theory emphasizes that family travel choices are influenced by leisure opportunities as well as factors that ensure children's safety, well-being, and development. Within this framework, several dimensions are important for assessing child safety in water theme parks. The first dimension is Bonding and Togetherness. This highlights how family tourism fosters shared experiences that strengthen family connections. Activities like water play and interactive rides allow meaningful interaction between parents and children, which reinforces family unity (Tseng et al., 2024).

The second dimension is Learning and Development. Travel serves as a platform for children's cognitive and physical growth beyond just leisure. In water theme parks, initiatives such as safety education programs, informative signage, and supervised learning activities reflect this dimension (Bertolucci, 2022).

The third dimension is Physical Safety, a key factor in choosing a destination. Families prioritize visible and proactive safety measures. This includes trained lifeguards, clearly displayed safety rules, and well-maintained infrastructure, all of which help reduce the risk of accidents and injuries (Lee & Thompson, 2007).

Emotional and Psychological Security is also important. Both parents and children look for environments that decrease anxiety and promote comfort in new settings. Child-friendly designs, approachable staff, and fun mascots contribute to psychological reassurance and improve the overall visitor experience (Wong & Cheung, 2019).

Finally, Parental Trust and Risk Perception play a significant role in family travel decisions. Parents' confidence in a destination is strengthened by reliable safety inspections, clear communication of emergency procedures, and child-tracking systems. These factors build trust and decrease perceived risks, making families more inclined to choose a destination (Sadeghloo et al., 2024).

Together, these dimensions provide a solid framework for evaluating child safety in family tourism. They also form the basis for the measurement variables used in this study. Table 1 presents a summary of these dimensions and illustrates their application in the context of water theme parks.

Table 1. Family Tourism Theory Dimensions and Their Application to Child Safety

Dimension	Definition	Application in Water Theme Parks
Bonding and Togetherness	Shared experiences that strengthen family ties	Family play zones, group rides, water activities
Learning and Development	Opportunities for growth and education	Safety education programs, informative signage
Physical Safety	Protection from injury and accidents	Lifeguards, safety barriers, and regular safety inspections
Emotional Security	Psychological comfort and reassurance	Child-friendly design, mascots, and approachable staff
Parental Trust & Risk Perception	Parents' confidence in safety measures	Child-tracking systems, emergency response protocols

2.3 Best Practices at Water Theme Parks

Water theme parks offer a variety of attractions such as water slides, splash pools, and artificial rivers that appeal to children. However, the dynamic nature of these environments also introduces a number of risks, including slipping, collisions, submersion, and separation from guardians. Therefore, best practices in child safety are critical in minimizing hazards and improving the visitor experience. Among the most important safety provisions are height and weight restrictions, physical barriers, water depth markers, and adequate signage in multiple languages. Effective water theme parks also segment play zones based on age and ability, which allows for tailored safety supervision and risk mitigation. Lifeguard presence is another crucial component ideally, guards should be highly visible, well-distributed across attractions, and trained in both CPR and child-specific emergency protocols (Lee & Thompson, 2007). Several parks have started implementing digital tracking systems, wristbands with identification features, and mobile app integrations to help parents monitor their children in real time. These practices reflect a broader industry shift toward proactive, tech-driven safety management. Studies by Truong et al. (2022) and Scheller et al. (2024) further highlight how Southeast Asian parks

are adopting international safety benchmarks, while also noting persistent gaps in standardization. This underlines the need for continuous assessment and improvement, particularly in kids' zones where child behavior is less predictable and the margin for error is minimal.

2.4 Gaps in Existing Research

While literature on family tourism and child safety in theme parks has expanded in recent years, several critical gaps remain unaddressed. First, most existing studies focus broadly on overall safety or visitor satisfaction, with minimal attention given to child-specific safety practices within dedicated kids' zones (Wong & Cheung, 2019; Wu et al., 2018). These areas are often treated as part of the general park environment, despite being uniquely designed for and frequently used by young children who require heightened supervision and protection.

Second, emotional and psychological safety such as children's sense of security in unfamiliar environments is rarely included in safety assessments. Previous studies have largely emphasized physical hazards like drowning or injury (Lee & Thompson, 2007), without exploring how environmental design, staff interaction, and emergency preparedness affect a child's comfort and confidence (Bertolucci, 2022; Bigné et al., 2005).

Third, standardized evaluations across different parks are limited. Few comparative studies have assessed whether safety protocols and infrastructure are implemented consistently across Malaysian water theme parks. This makes it difficult for parents, operators, and policymakers to identify best practices or benchmark safety standards (Wu et al., 2018).

Finally, there is a lack of research based on direct parental input. Parents and guardians are the primary decision-makers in family travel and the most involved in supervising children during park visits. However, their perceptions are often underrepresented in academic literature on safety. This study addresses this gap by evaluating child safety practices from a parental perspective, specifically focusing on kids' zones, an area that remains underexplored despite its relevance in family tourism.

3. METHODOLOGY

3.1 Research design

The research aims to assess child-friendly safety features in family tourism destinations at Malaysian water theme parks. To achieve this objective, a quantitative research design is applied, allowing for statistical analysis of child safety practices. The study adopts a descriptive approach to explore current safety measures and identify potential shortcomings. An online survey serves as the primary data collection tool, which is

particularly suitable for gathering parents’ perspectives on safety and for pinpointing areas in need of improvement.

3.2 Population

The study population consists of parents or guardians who have visited Malaysian water theme parks with children under the age of 12. This group is selected because they are directly responsible for evaluating and ensuring child safety during family trips. The choice of this population is further supported by visitor statistics from key Malaysian water theme parks. For example, Sunway Lagoon recorded approximately 1.5 million visitors in 2023, with families accounting for an estimated 60% of total attendance (Sunway Group, 2024). Similarly, A’Famosa Water Theme Park attracted around 500,000 visitors annually, with 40% participation from family groups, amounting to approximately 200,000 family visitors (Malaysia Attractions Benchmark Report, 2024). Globally, it is estimated that 30–40% of theme park visitors are parents accompanied by children aged 12 and younger (IAAPA, 2024), further supporting the relevance of focusing on this demographic.

3.3 Sampling

A purposive sampling method is used to select participants who meet specific criteria: they must have visited at least one water theme park in Malaysia within the past year and must have brought children aged 12 or younger during the visit. This approach ensures that participants have recent, relevant experiences that align with the study’s focus on child safety. According to Krejcie and Morgan’s (1970) sample size table, a population of 60,000 to 80,000 would typically require a sample of approximately 382 respondents to ensure a 95% confidence level and $\pm 5\%$ margin of error. However, this study uses 300 respondents based on a purposive sampling approach, which remains acceptable for exploratory research, especially when targeting specific demographics with relevant experience.

Table 2 shows the Krejcie and Morgan’s sample table size.

Table 2. Krejcie and Morgan’s sample table size.

Population Size (N)	10	50	100	200	500	1000	5000	10000	50000	100000+
SampleSize (S)	10	44	80	132	217	278	357	370	381	384

3.4 Research Instruments

The study used a structured questionnaire based on reliable research tools in tourism safety and family tourism. The questionnaire had four sections: demographic information, evaluation of safety measures, respondents’ awareness of safety programs, and an open-ended section for additional comments. We selected items that measure child safety

practices from established studies to ensure their validity. For instance, we adapted safety signage and inspection items from Lee and Thompson (2007), lifeguard sufficiency and educational safety programs from Hamilton, Keech, and Peden (2025), child-tracking systems from Wong and Cheung (2019), staff training in child safety from Sadeghloo et al. (2024), and first aid and safety equipment items from Wu et al. (2018). Table 3 summarizes the variables and their sources.

Table 3. Variables and Sources of Measurement Items

Variable / Item	Example Item Wording	Source (Adopted/Adapted)
Safety signage	"The park has clear signs indicating child safety rules."	Lee & Thompson (2007)
Lifeguard sufficiency	"There are sufficient lifeguards on duty at all times."	Hamilton, Keech, & Peden (2025)
Child-tracking system	"The park has a system for tracking children in case they get lost."	Wong & Cheung (2019)
First aid facilities	"The water theme park has a first aid station easily accessible."	Wu et al. (2018)
Staff training in child safety	"Staff at the park are trained in child safety procedures."	Sadeghloo et al. (2024)
Regular safety inspections	"The water theme park conducts regular safety inspections."	Lee & Thompson (2007);
Emergency response communication	"Emergency response plans are clearly communicated to visitors."	Bertolucci (2022)
Child safety equipment	"The park provides safety equipment suitable for children."	Wu et al. (2018); Kim & Ko (2012)
Educational safety programs	"Awareness of educational programs on water safety for children."	Bertolucci (2022); Hamilton et al. (2025)

All items were measured using a 5-point Likert scale that ranged from 1 for Strongly Disagree to 5 for Strongly Agree. We collected data over four weeks using Google Forms, which offered a convenient and low-cost platform that was widely accessible. Participants were recruited through convenience sampling on social media and personal networks. We strictly followed ethical protocols, including informed consent, anonymity, and confidentiality. A pilot test with five respondents helped refine item clarity and wording, leading to minor adjustments while keeping the construct validity intact.

3.5 Data Analysis

Data gathered from the survey is analyzed using IBM SPSS software Statistics 27. The study applies descriptive statistics, including frequencies, percentages, and mean scores, to examine child safety measures and to highlight gaps and weaknesses in current practices. The use of descriptive analysis aligns with the research objectives and provides a systematic and reliable framework for interpreting the collected data, particularly in studies focused on visitor experience and satisfaction (Wu et al., 2018).

4. FINDINGS AND DISCUSSION

4.1 Reliability Analysis

In order to assess the internal consistency of the measurement instrument, reliability analysis was performed using Cronbach's Alpha. The analysis resulted in a Cronbach's Alpha value of 0.976, which exceeds the minimum acceptable threshold of 0.70 set by Nunnally (1978). This shows that the tool is very reliable. The corrected item-total correlations for all items were above 0.80, indicating strong relationships between each item and the overall scale. Table 5 summarizes the reliability results.

Table 5. Reliability analysis results

Construct	No. of Items	Cronbach's Alpha	Interpretation
Child Safety Practices Scale	10	0.976	Excellent Reliability

The high reliability value shows that the scale is consistent and works well for measuring how children feel about safety. So, the tool is statistically reliable for analyzing the descriptive results.

4.2 Demographic Profile

The findings from the quantitative analysis of 309 parent respondents provide valuable insights into perceptions of child safety measures at Malaysian water theme parks. The study addresses three research objectives: evaluating current safety practices, identifying shortcomings, and proposing recommendations, with descriptive statistics used to interpret survey responses and highlighting key patterns. Most respondents are aged between 26 and

35, indicating that young adults are the primary visitors, typically parents or legal guardians who frequently visit popular parks such as Sunway Lagoon, SplashMania Waterpark, and A’Famosa Water Theme Park about three to four times per year. The majority also reside in suburban areas, suggesting a predominantly local viewpoint influenced by suburban travel habits. Table 6 illustrates the demographic profile.

Table 6. Demographic profile

Variable	Category	Frequency (n)	Percentage (%)
Age	Under 25	52	17.5
	26 – 35	81	26.9
	36 – 45	69	23
	46 – 55	53	17.8
	55+	45	14.9
Visit Annually	1 – 2 times	80	26.5
	3 -4 times	146	48.5
	5+	75	24.9
Role in Travel Group	Parent/ Legal Guardian	229	76.4
	Other Caregiver	32	10.7
	School Trip Teacher	39	12.9
	Sunway Lagoon		
	0 times	26	8.7%
	1-2 times	71	23.7%
	3-4 times	57	

Frequency visiting following water them			19.0%
	5-6 times	61	20.3%

park annually	7-9 times	65	21.7%
	10+	29	9.7%
	SplashMania Waterpark		
	0 times	23	7.7%
	1-2 times	53	17.7%
	3-4 times	75	25.0%
	5-6 times	63	21.0%
	7-9 times	68	22.7%
	10+	27	9.0%
	A'Famosa Water Theme Park		
	0 times	40	13.3%
	1-2 times	65	21.7%
	3-4 times	73	24.3%

	5-6 times	57	19.0%
	7-9 times	47	15.7%
	10+	27	9.0%
	Adventure Waterpark Desaru Coast		
	0 times	38	12.7%
	1-2 times	69	23.0%
	3-4 times	42	14.0%
	5-6 times	52	17.3%
	7-9 times	70	23.3%
	10+	38	12.7%
	LEGOLAND Water Park		
	0 times	35	11.7%
	1-2 times	67	22.3%
	3-4 times	68	22.7%

	5-6 times	54	18.0%
	7-9 times	59	19.7%
	10+	26	8.7%
	Lost Word of Tambun		
	0 times	28	9.3%
	1-2 times	60	20.0%
	3-4 times	70	23.3%
	5-6 times	53	17.7%
	7-9 times	61	20.3%
	10+	37	12.3%
	Splash Out Langkawi		
	0 times	33	11.0%
	1-2 times	53	17.7%
	3-4 times	70	23.3%

	5-6 times	57	
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			19.0%
	7-9 times	66	22.0%
	10+	30	10.0%
	Wet World Water Park		
	0 times	28	9.3%
	1-2 times	61	20.3%
	3-4 times	63	21.0%
	5-6 times	65	21.7%
	7-9 times	66	22.0%
	10+	26	8.7%
	Bukit Gambang Waterpark		
	0 times	27	9.0%
	1-2 times	67	22.3%

	3-4 times	66	22.0%
	5-6 times	53	17.7%

	7-9 times	64	21.3%
	10+	32	10.7%
	i-city Waterworld		
	0 times	21	7.0%
	1-2 times	60	20.0%
	3-4 times	62	20.7%
	5-6 times	84	28.0%
	7-9 times	56	18.7%
	10+	26	8.7%
	Others		
	0 times	28	9.3%

	1-2 times	66	22.0%
	3-4 times	68	22.7%
	5-6 times	73	24.3%

	7-9 times	53	17.7%
	10+	21	7.0%
Primary Reside	Urban Area	58	19.4
	Suburban Area	107	35.6
	Rural Area	97	32.4
	Outside the country	38	12.6

4.3 Analysis of Optimum Water Theme Park Safety Practices

The descriptive analysis indicates that most parents and guardians generally agree on the adequacy of child safety practices at Malaysian water theme parks. About 77% of respondents, including those who "Slightly Agree," "Agree," and "Strongly Agree," expressed satisfaction with the current safety measures. This suggests that, overall, visitors hold a positive perception of the parks' safety efforts, though some areas may still need further attention and improvement.

Findings related to the research objective indicate that respondents generally perceive current child safety practices in Malaysian water theme parks as effective. The overall mean score recorded across all 10 items assessing safety practices was 4.45 out of 6 on a Likert scale, suggesting that most respondents fell within the range of "Slightly Agree" to "Agree." As shown in Table 7, the highest-rated items were regular safety inspections, child-tracking systems, and the presence of sufficient lifeguards, each with mean scores ranging from 4.50 to 4.59. These items reflect strong visitor confidence in the parks' visible and proactive safety efforts. The higher ratings indicate that parents and guardians appreciate consistent maintenance, effective monitoring technologies, and reliable on-site

personnel key components that contribute to their sense of security during visits.

However, the lowest-rated item staff training in child safety procedures while still positively received, reflects a potential area for improvement. This aspect recorded a lower mean score of 4.35, suggesting that although respondents acknowledge some level of competency, they perceive room for enhancement in how staff respond to child-specific emergencies or interact with young visitors. The standard deviation for this item (e.g., ± 0.78 , if available from SPSS) may also indicate variability in perceptions, possibly influenced by differing experiences across park locations. Overall, while the results show a generally positive outlook on safety practices, the relatively lower rating for staff preparedness highlights the importance of ongoing professional development and visible emergency readiness in ensuring parental trust and child safety.

Table 7. The questionnaire items

Item No.	Item Description	Mean	SD	Rank
B5	The water theme park conducts regular safety inspections.	4.59	1.521	1
B9	The park has a system for tracking children in case they get lost.	4.56	1.540	2
B6	There are sufficient lifeguards on duty at all times.	4.50	1.447	3
B3	The park provides safety equipment suitable for children.	4.49	1.660	4
B10	The water theme park has a first aid station easily accessible to visitors.	4.49	1.492	5
B4	The park has designated areas for children to play safely.	4.39	1.569	6
B8	Emergency response plans are clearly communicated to visitors.	4.38	1.626	7
B7	Awareness of educational programs on water safety for children.	4.37	1.437	8
B1	The park has clear signs indicating child safety rules.	4.36	1.511	9
B2	Staff at the water theme park are trained in child safety procedures.	4.35	1.575	10

Further analysis revealed that parents with children under five years old demonstrated higher levels of concern compared to parents of older children, particularly regarding the sufficiency of safety barriers and proximity of first aid stations. This indicates that child age influences the perception of safety adequacy. Additionally, parents who visited multiple water theme parks within a year exhibited a more critical evaluation, suggesting that comparative experiences lead to higher safety expectations. A notable proportion of respondents (around 23%) indicated that safety-related information provided on park websites and signage was insufficient, which points to an area that could greatly benefit from improvement in communication and transparency.

Another critical finding is that while child-tracking systems were rated positively, there is a strong parental desire for more advanced technological integrations, such as mobile app notifications and real-time tracking updates. This suggests that future investments in digital safety solutions could significantly enhance parental satisfaction and trust.

5. DISCUSSION

Among the safety practices evaluated, the top three with the highest mean scores were regular safety inspections ($M = 4.59$), child-tracking systems ($M = 4.56$), and the sufficiency of lifeguards ($M = 4.50$). These findings highlight the strengths of Malaysian water theme parks, showing an emphasis on operational safety and technological readiness. The consistently high ratings indicate that Malaysian parents and guardians appreciate these safety measures, which help create a safe and family-friendly atmosphere. Regular inspections show a park's commitment to maintenance and hazard prevention. Child-tracking systems offer modern support for parents in busy environments. Having trained lifeguards on duty ensures quick responses, especially in high-risk water areas.

These elements show a strong connection to the principles of Family Tourism Theory. This theory highlights the need for recreational spaces that provide physical safety, emotional security, and easy supervision for families with young children. Additionally, these safety features align with Child Safe Tourism Principles, which encourage organized and child-friendly protection strategies. In Malaysia, where water theme parks are a key part of family tourism, these practices help build public trust. They also enhance the reputation of local parks like Sunway Lagoon and Legoland Malaysia as dependable places for leisure. The high rating for regular safety inspections specifically supports visible safety protocols and contributes significantly to visitor assurance in public recreational settings.

The second highest rated practice, the use of child-tracking systems, supports Lee et al. (2007)'s findings that technology-driven safety measures significantly enhance parental peace of mind in crowded environments. Malaysian parents increasingly expect rapid responses to potential child separation incidents, making such interventions a new norm in family tourism. Similarly, the positive perception of lifeguard sufficiency aligns with global recommendations, which emphasize that well-trained, visible, and strategically positioned lifeguards serve as the most reliable frontline safety personnel Bertolucci, S. F. (2022), which emphasize that well-trained, visible, and strategically positioned lifeguards serve as the most reliable frontline safety personnel. In Malaysia, the presence of attentive lifeguards is crucial for reinforcing parental confidence and reducing perceived risks during recreational outings.

On the other hand, the lowest-rated item staff training in child safety procedures ($M = 4.35$) raises concerns regarding staff preparedness in addressing child-specific emergencies. While equipment and safety features may be present, the perceived gap in staff visibility or engagement indicates the need for improved competency and proactive interaction. This finding echoes the assertion that visitor confidence improves when staff readiness is demonstrated not only through qualifications but also through visible drills and responsive behavior. In the Malaysian water theme park context, prioritizing staff

development could offer both physical protection and emotional reassurance to visitors, especially when dealing with large groups of children.

Comparisons with previous studies show how important safety signs, trained staff, and parental involvement are. They also reveal a growing public demand for better monitoring technology and organized safety education programs. These findings indicate a shift toward modern, proactive safety management in Malaysia. While current practices are mostly well-received, ongoing improvement is crucial. Investing in staff training, child-tracking systems, and safety education will be vital for meeting changing expectations and raising safety standards in Malaysia's water theme park industry.

Moreover, integrating sustainability into water theme park operations is essential for ensuring the long-term safety and success of family tourism. Sustainable planning and management which include regular safety upgrades, better waste handling, and eco-friendly infrastructure—improve not only safety but also environmental responsibility. Involving parents, staff, and local communities in safety-focused initiatives helps develop child-centered tourism solutions. Adopting green practices across accommodations and operations boosts visitor satisfaction and supports wider goals of sustainable tourism. Using technology, like mobile-enabled child-tracking systems and smart monitoring tools, should be expanded to provide real-time protection. Eco-certifications such as Green Globe can also help water theme parks build trust with families who care about safety and sustainability.

The role of stakeholders is crucial in promoting safety and sustainability in Malaysia's water theme parks. Park managers must ensure strict safety protocols are followed and provide ongoing training for staff, especially in handling emergencies involving children. Policymakers are key in drafting and enforcing updated safety regulations, while parents offer valuable feedback. Industry associations provide certification frameworks and best practices, and community members can join in educational safety campaigns. Together, these groups can create safer, more inclusive, and environmentally friendly spaces for families.

Looking ahead, the future of sustainable tourism in Malaysian water theme parks looks bright. The demand for family-friendly, safe, and eco-friendly tourism spots is rising. Water parks are likely to increase their use of smart technologies, such as digital safety alerts, mobile app features, and interactive safety zones. Stronger partnerships between park operators, government entities, and visitor communities will help develop more inclusive and forward-looking tourism models. Growing environmental awareness will also motivate parks to use clean energy, improve waste management, and create eco-friendly attractions. By focusing on safety and sustainability, Malaysia's water theme parks can remain attractive destinations for family tourism.

The findings also highlight the need to improve parental education efforts. Malaysian water theme parks should think about introducing child safety briefings or workshops at entry points to raise awareness of available safety features and emergency

protocols. Mobile apps that offer safety guides and real-time alerts could help parents feel more confident as they navigate the park.

Additionally, partnering with educational institutions to create child safety campaigns could foster a safety culture among children and families before their visit. Finally, adding multilingual safety signs and hiring trained multilingual staff would enhance the experience for both local and international tourists, especially in busy locations like Sunway Lagoon and LEGOLAND Malaysia.

6. CONCLUSION AND IMPLICATIONS

This study contributes to the fields of family tourism and child safety in recreational settings by addressing a gap in the existing literature. It offers insights into the safety concerns and experiences of parents visiting water theme parks with their children. The study also provides a clearer understanding of the factors that affect parental satisfaction and decision-making when choosing family-friendly destinations. Moreover, it presents practical recommendations for water theme park operators, policymakers, and tourism authorities. These can help improve child safety standards by identifying best practices and pointing out areas that need more development. These findings can inform future research focused on improving safety protocols and implementing specific actions to create safer and more enjoyable family travel experiences.

Despite these contributions, the study points out several limitations. First, the research took place only in Malaysian water theme parks, which may limit how the findings apply to other tourism settings or cultural contexts. Second, relying on self-reported data from parents could lead to response biases or inaccuracies in recall that might affect the accuracy of the results. To improve future research, similar studies should be done in various regions and cultural settings. This would help broaden the usefulness of the findings and provide a better understanding of child safety in family tourism destinations. Additionally, including qualitative methods like in-depth interviews or focus group discussions might reveal deeper, emotion-based perspectives. This could enhance the quantitative data and provide more detailed insights into how parents perceive things and make decisions.

Future research should look into the views of more key stakeholders, such as water theme park operators, policymakers, and industry regulators. This will help gain a better understanding of the challenges and opportunities related to improving child safety. Including multiple perspectives can lead to the creation of better and more lasting safety strategies. Long-term studies are also important to track how safety measures affect family travel habits, child development, and the appeal of family tourism destinations. These studies will offer valuable insights into the lasting effects of improved safety practices.

This research highlights the strong need to prioritize child safety in Malaysian water theme parks, which has wider implications for family tourism spots around the world. It

calls for ongoing teamwork among park operators, policymakers, and tourism authorities to create safer and more child-friendly spaces that meet family needs and support the long-term health of the industry. This study also encourages future researchers to expand on its findings to further improve the knowledge and practices in the area of family tourism and child safety.

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