

The Effects of Caregivers, Physical Facilities, Environment, and Food Safety on the Safety Assurance Level at Childcare Centres

YATY SULAIMAN^{1*}, NURUL AIN BINTI MD BASRI², MOHD YUSRI SHAHRIL ISMAIL³,
ALYSHA ARIF⁴

^{1,2}School of Business Management, College of Business
Universiti Utara Malaysia, Kedah
MALAYSIA

³Southern Pipe Industry (Malaysia) Sdn. Bhd.
4577, Mk. 15, off Jalan Chain Ferry
12100 Butterworth, Pulau Pinang
MALAYSIA

⁴Faculty of Ocean Engineering Technology and Informatics
Universiti Malaysia Terengganu
21030 Kuala Nerus, Terengganu
MALAYSIA

Abstract:- Safety assurance is crucial for every child placed under the supervision and care of a childcare centre. This study aims to investigate factors influencing the safety assurance level of childcare centres in Perak, Malaysia. The scope of this study concentrates on the parents who subscribe to the services provided by licensed childcare centres and their views towards the safety assurance level provided by the centres. Meanwhile, the state of Perak was chosen as the research setting following its status as the second-highest population in peninsular Malaysia and no research to date has been conducted regarding the safety of childcare centres within the state. This research is important to create awareness among parents and childcare centres on the factors that may influence children's safety at childcare centres. Furthermore, having in-depth insights and understanding about the factors influencing the safety assurance level at childcare centres will minimise any threats and dangers on site, subsequently avoiding potential injuries, particularly to children.

Keywords:- Safety assurance, Caregivers, Physical facilities, Environment, Food safety

Received: March 10, 2021. Revised: January 17, 2022. Accepted: February 10, 2022. Published: March 16, 2022.

1 Introduction

The increasing statistic of child injuries every year has developed a greater concern among parents [1], particularly when childcare centres are no longer regarded as a safe place for their children. As a result, there is a pressing need to re-evaluate the present enactment in the attempt to improve the services offered by childcare centres. Hence, important features of safety and quality should be inspected so that authorities can concentrate on the essential aspects that must be given additional attention [2] [33]. In this regard, well-treated employees provided with benefits, reward systems,

and trainings will create a higher level of job satisfaction and responsibilities among them [3].

The aim of this study is to identify the effects of caregivers, physical facilities, environment, and food safety on the safety assurance level in childcare centres in Perak, Malaysia. The study gives some contributions to the literature related to the Total Quality Management (TQM) theory by investigating the relationships between physical facilities, environment and food safety and safety assurance level in child care centres. This study differs from previous studies on child care centres by incorporated TQM elements in child care setting. The rising number of working mothers within the workforce has

boosted the demand for childcare centres from time to time. The majority of parents have taken a shortcut by sending their children to unregistered childcare centres and their neighbours. In this regard, the operational compliance aspect of childcare centres is extremely important to guarantee the development and safety of children. In 2017, there was a case reported in Bangi, Selangor where a childcare centre owner and two of her workers were charged for being violent and abusive towards two toddlers and a baby. Not only that, the child care centre was also found running with no license. Such case which is repeatedly happening among childcare centres subsequently increases the parents' scepticism concerning their children's safety at childcare centres.

2 Literature Review

2.1 Childcare Centres

Childcare centres offer supervision and care for newborns, toddlers, preschoolers, and young children that do not go to full-time school [4]. According to the Child Care Act 1984 (Act 308), a childcare centre in Malaysia refers to a building that cares for four or more children less than 4 years old with a certain payment and salary [5]. It categorises childcare centres into four types, namely home-based centres that accommodate less than 10 children, office childcare centres that operate at the parents' workplace and accommodate 10 or more children, community childcare centres that receive funds from the government, accommodate 10 or more children, and operate in a certain permissible area, as well as childcare institutions that accommodate 10 or more children [5].

A competent and well-maintained childcare centre is an ideal arrangement for working parents [6]. The principal criteria of an excellent childcare centre is the guaranteed ability to provide appropriate childcare along with a child-friendly surrounding [6]. In addition, a licensed child care centre should follow a set of established regulations and policies, possess skilled and caring workers, provides secured and clean amenities, cares for the children's well-being and hygiene, and encompasses a stimulating and organised setting [6]. Every childcare centre should be registered with the Social Welfare Department of Malaysia to ensure that they possess the prerequisite

requirements by the Fire and Rescue Department, Health Department, and resident committee [6]. Moreover, childcare centres have been measured as a place for parents to leave their children whilst they are at work [7]. Due to strong competition in the childcare business, child care centres need to innovatively change their concept and offer extra services as an alternative to solely childcare services [7].

2.2 Safety Assurance

According to the Commission Regulation (2018), safety assurance can be defined as arranged and organised activities required to give ample trust for a product, service, organisation, or functional system to accomplish satisfactory or adequate safety. Whereas, the Federal Aviation Administration (2018) defines safety assurance as a threat control action that is intended to increase self-belief for successful Safety Risk Management.

2.2.1 Children Injuries

The first three years in children's life is essential especially to create their personalities, motor skills, and intelligence [8]. Therefore, a quality childcare centre is essential for their early education as existing evidence shows that children's early life experience is interconnected with their improvement [9]. From the well-being perspective, child mistreatment constitutes all forms of physical abuse and/or emotional ill-treatment resulting in real or possible injury to the child's well-being, endurance, and growth. Under the Child Act 20011, relevant parties including doctors, relatives, and caretakers are obligated to report suspected cases of child mistreatment. Statistic on child abuse is compiled yearly by the Department of Social Welfare, Royal Malaysian Police, and hospitals. Moreover, efforts to set up a synchronised system of statistics collection between agencies are still progressing among various organisations.

2.2.2 Causes of Injuries

Agent factors of injury refer to the means by which injuries can take place [10]. It includes environment, physical and thermal forces, physical conflicts, as well as elements like pointed edges (toys/furniture/objects), high/low temperature, and effects of gravity such as falls. Altering the design of manufactured goods can efficiently change these agent factors, thus avoiding potential injuries [10].

Numerous studies highlighted that playground injuries prone to happen due to the imbalance between the height of playground equipment and shock absorbing underneath the equipment [11]. A study by [12] showed that 74% of injuries among children commonly happen at playground followed by 81% of injuries that happened during free-play. Furthermore, 40% of injuries that occurred at day-care centres are due to falls [12]. As time progresses, [13] found that many centres are no longer considering the balance between playground equipment heights and the surface.

2.3 Children Injuries Prevention

Earlier literature that investigated the connection between childcare centres with rates of injury reported that sending children to a childcare centre, particularly one with a large size, increases their probability of contacting with pathogens carried by other children. In this regard, children exposed to prolonged childcare early in life may build on immunities that prevent sickness throughout the school-age duration. For that reason, having further investigation on this subject is crucial to establish the gaps in harmful practices for future intervention [14]. This will assist the effort to standardise childcare centres and offer a safe environment for children.

2.4 Caregivers

Caregivers refer to individuals who hold the accountability of caring for children in the nonappearance of their parents or guardians. In this regard, childcare centres can be regarded as caregivers to a small group of children [6]. According to [15], the main prevention to avoid injuries is by having supervision from the right caregivers. For this to happen, it is important for caregivers to be capable, prepared, and eager to conduct their duties at any time. These factors are dependent upon numerous variables including the caregivers' wisdom where the children's well-being may be compromised if caregivers are half-heartedly or reluctant to do their task properly. Therefore, caregivers' cognition, wisdom, way of life, attitudes, and perceptions are made as the current focal point of this study. Cognitions often construct the caregivers' behaviours by providing an outline on how they picture, observe, and exercise care for the children [15]. Moreover, caregivers frequently appear to possess limited understanding regarding injury

morbidity and mortality rates; thus believing that they are unaccountable to avoid such injury [15]. In other words, caregivers seem to have difficulty in determining when and how to implement their supervisory practices if the injury occurs repeatedly. This is because caregivers who do not have the expertise in doing their tasks will result in poor commitment. [36] Hence, factors like salary, working conditions, and benefits are necessary to attract and retain committed caregivers. However, many childcare centres fail to provide their caregivers with these factors, thus adding more adverse impact to the situation.

2.5 Physical Facilities

Physical facilities describe a conducive environment that emphasises on the cooperation and openness between two parties [16]. It imposes significant importance to ensure excellent functional ability of services [17]. In this regard, the physical facility of a licensed childcare centre must serve several functions, clean, and harmless to perform as a key component of children's general learning experience (Afreeen, 2011). Furthermore, the physical facilities of a licensed childcare centre should be comfortable, attractive, and offer a variety of playing and learning opportunities [6]. Physical positioning at the right place and time is important for an organisation [18].

Physical facilities also have a function in sustaining the value of childcare centres [19]. It is claimed that child care settings should guarantee a high quality of health and safety at all times [20]. In this regard, the legislations, policies, and guiding principles on early childhood care and education in Malaysia provide additional priority to cognitive, social, and emotional growth rather than the physically designed environment [19]. Environmental consciousness involves every action which is significant to the use of environmental resources [21]. It is recommended that further research on physical facilities should be conducted [22] as it possesses a strong impact on young children's knowledge and growth. Many organisations in Malaysia are advised to engage with technological advancement [23].

2.6 Environment

Environments that are planned with safety in mind will allow children to explore and move about freely. This provides more opportunities for caregivers to interact with the children rather than spending all of

their time observing their safety. A safe environment includes developing suitable equipment and a sufficiently organised open room for children to explore and gain knowledge about the world around them. Due to the individualised method in group surroundings, caregivers strive to supply the children with a constant welcoming environment [6]. The open-door policy and emphasis on the group method in childcare centres thus makes parental contribution crucial. This is because the cooperation between childcare providers, caregivers, and parents helps to prepare a supporting and stimulating environment for the children.

Childcare centres that place a great emphasis on children perceiving pleasure and having fun from exercises are good for initial learning and growth. Therefore, having a variety of age-appropriate toys in childcare centres will support children's growth as well as helping them to stimulate imaginative and creative activities [6]. Therefore, various authorities and stakeholders aim to establish a safe play setting for children, subsequently resulting in a significant raise in strict risk-managing procedures across many countries. These procedures consist of regulations on the physical features of children's playing environment [24].

The findings by [25] reported that most parents are highly concerned about protecting children as they interact with outsiders who enter the childcare centre area. Every childcare centre has its policies and procedures that must be followed by anyone who wishes to take a child from the care centre aside from the child's parents. Thus, childcare providers should emphasise on the curriculum aspect to make decisions about children's care and education, which contain five basic components namely knowing the children, creating a responsive environment, what the children are learning, caring and teaching, as well as building partnerships with their families [37]. Among the curriculum provided to children is supporting their development, cultural relevance, spiritual practice, education strategy according to their respective age, and promote the development of their mind. This shows that child care providers are aware about the importance of curriculum and its impact on children [34] [35].

2.7 Food Safety

Nutritional factor is one of the indicators that reflect the quality of services offered by a childcare centre. In this regard, the quality of foods and dietary programme impose both direct and indirect reflections on the level of service satisfaction offered by childcare centres as a whole. Organisations' priority towards quality practices is important to develop a quality culture [26]. The safe handling and provision of foods, personal hygiene practices, proper cleaning of equipment, and disposal of waste will prevent children from having food poisoning and diarrhoea. In line with the rising demand for childcare centres, many researchers intend to expand the investigation by looking at its influence towards childcare caregivers' practices [27]. Childcare centres are mostly related to the increase of overweight threat during childhood [27]. In contrast to children's nutritional eating and drinking, physical activities and inactive behaviour can be attributed to the respective childcare centres [28].

Most caregivers stated that the quality of foods served for the children under their care is based on the menu certified by the Ministry of Health Malaysia. These foods must be nutritious and appropriate to the children's age, stored at a designated food storage area, and constantly checked for its expiration date. When involved in food preparation, children often eat more fruits and less sugary snacks [27]. In addition, all foods provided at childcare centres should come from permitted sources such as grocery shops or authorised food sellers while no home-canned foods or unpasteurized dairy products and fruit juices should be served in child care centres. In addition, it is essential not to serve honey to infants and toddlers as it might contain bacterial spores that are hazardous to their health.

3 Research Methodology

3.1 Theoretical Framework

Fig. 1 shows the research model that was developed and illustrated based on the research hypotheses. The model comprises five elements which include caregivers, physical facilities, environment, and food safety as the independent variables and safety assurance as the dependent variable.

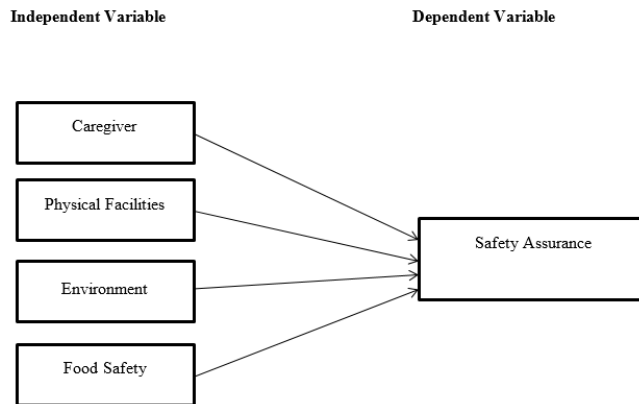


Fig. 1: Theoretical Framework of Safety Assurance Level in a Childcare Centre

Hypotheses

The following hypotheses were developed to test the theoretical framework of the study:

H₁: Caregivers have a significant relationship with the safety assurance level in childcare centres.

H₂: Physical facilities have a significant relationship with the safety assurance level in childcare centres.

H₃: Environment has a significant relationship with the safety assurance level in childcare centres.

H₄: Food safety has a significant relationship with the safety assurance level in childcare centres.

3.2 Research Design

This quantitative study aims to investigate the factors influencing the safety assurance level at licensed childcare centres. It examined the relationship between four independent variables (i.e., caregivers, physical facilities, environment, and food safety) with safety assurance level as the dependent variable. The research design comprises a cross-sectional method as it is simple, inexpensive, and the data can be collected within a short time.

3.3 Sampling Technique

Simple random sampling was used to select the respondents of this study. According to Bougie et. al. (2010), this method is efficient since it provides the most generalisability and low biases.

3.4 Sampling Procedure

The sampling frame of this study was focused on parents who subscribe to the services provided by licensed childcare centres in Perak. For this purpose,

probability sampling was employed to attain the findings.

3.5 Sampling Size

According to the official portal of the Department of Statistics Malaysia, the total population in Perak in 2017 was 2.5 million. Based on Table 3.2 proposed by [29], a population of 2 million people can be represented by a 384 sample size. Therefore, a total of 384 parents who use the services provided by licensed childcare centres were selected as the respondents in this study.

3.6 Sampling Method

Simple random sampling was used in this study to obtain a wide range of responses from the respondents. This is because the population in simple random sampling was heterogeneous and contained different groups related to the topic under investigation.

3.7 Target Population

A population refers to the entire group of people or elements with common characteristics or purposes. The population of this study involved parents who use the services provided by licensed childcare centres in Perak.

3.8 Data Collection Procedure

The data in this study were collected using a questionnaire. Tables 1 to 5 show the items used in the questionnaire to measure the variables under investigation.

Table 1. Measurement Items of the Safety Assurance Scale

Items
Indoor Hazards
Peanuts, whole grapes, chunks of hot dogs, and hard candy are not served to children
Potentially poisonous substances such as cleaning supplies, pesticides, and medicines are stored in original, labelled containers.
Firearms are not present in the facility
Fire/Burn Prevention
Smoke detector present in facility
Smoke detector tested on a monthly basis
Hot water temperature does not exceed 120°F at outlet
Outdoor Hazards
There are at least 8 feet between pieces of playground equipment
All playground equipment is securely anchored
Maximum height of equipment does not exceed 6 feet
8 inches or more of resilient surface material underneath playground equipment
If a pool is present at the facility, it is surrounded by a fence 4 feet or higher or emptied when not in use
Emergency Procedure
At least one staff person on premises who is currently certified in cardiopulmonary resuscitation
At least one staff person on premises who has successfully completed a first aid course within the last three years
999 or other emergency phone numbers posted in facility
First aid kit kept in facility
Records of children's injuries kept

Table 2. Measurement Items of the Caregivers Scale

Items
Caregiver is aware of the potential harm AND willing, OR able, to protect the child from serious harm or threatened harm by others. This may include physical abuse, emotional abuse, sexual abuse, or neglect.
Caregiver's explanation for the injury to the child is consistent with the type of injury, and the nature of the injury suggests that the child's safety may be of immediate concern.
Caregiver does meet the child's immediate needs for supervision, food, and/or clothing.
Caregiver does meet the child's immediate needs for medical or critical mental health care (suicidal/homicidal).
Caregiver ensures there are no violence exists in the child care and poses an imminent danger of serious physical and/or emotional harm to the child.

Table 3. Measurement Items of the Physical Facilities Scale

Items
The child care center's building in good condition and meets Department of Social Welfare standards (e.g., structure is reliable; doors and windows have locks; indoor space is adequate for movement; chairs and tables are child-sized)
The child care center have toilets accessible and appropriate for children, per Department of Social Welfare guidelines (e.g., separate for boys and girls; child-sized; clean; water and soap available)
The floor clean, dry, smooth, and free from nails, clips, and other items that can suffocate children.
The Department of Social Welfare guideline and procedure for emergency in place (e.g., in case of fire, injury, or illness)
The indoor and outdoor environment free of poisonous plants, vegetation, and objects.
The child care centers have enough space for learning and movement activities, per Department of Social Welfare standards for space.

Table 4. Measurement Items of the Environment Scale

Items
The child care centre is friendly welcoming, comfortable and appealing to children.
The equipment and toys are safe and well maintained.
Easy entry and access is available for disable staff, children or parents.
I am satisfied with the surroundings (physical & atmosphere) of the child care centre

Table 5. Measurement Items of the Food Safety Scale

Items
The food preparation area of the kitchen is separate from eating, play, laundry, toilet, bathroom, and diapering areas. No animals are allowed in the food preparation area.
The food preparation area is separated from child care areas by a door, gate, counter, or room divider
There is no food in cans without labels. Food from dented, rusted, bulging or leaking cans is not used
All fruits and vegetables are washed thoroughly with water prior to use

3.9 Data Analysis

Basic descriptive statistics (mean, standard deviation) and frequency distribution were used to analyse the data of this study. It was achieved using the Statistical Package for Social Science (SPSS) software version 24.0.

3.10 Descriptive Statistics

Descriptive statistics (mean, frequency, and standard deviation) were used to describe the respondents' characteristics.

3.11 Reliability Test

Cronbach's Alpha coefficient was used to test the reliability of the questionnaire instrument. It is suggested that a coefficient value that exceeds 0.80 indicates good reliability, 0.70 is considered as acceptable, while a value less than 0.60 is considered to be of poor reliability.

3.12 Pearson's Correlation Test

Table 6 shows the scales used to interpret and explain the relationship between the independent and dependent variables:

Table 6. Interpretation of the Strength of Correlation

Value of coefficient relation between variables	Interpretation of the strength of correlation coefficient
0.80 and above	Very strong relationship
0.50 to 0.79	Strong relationship
0.30 to 0.49	Moderate relationship
0.29 to 0.10	Low relationship
0.01 to 0.09	Very low relationship

4 Findings

4.1 Survey Return Rate

Table 7. Survey Return Rate

No. of Distributed Questionnaire	No. of Received Questionnaire	No. Of Rejected Questionnaire	Total Accepted Questionnaire
380	358	2	356

The questionnaire was distributed to 380 parents who use the services provided by licensed childcare centres in Perak. The respondents were allotted a week to complete the questionnaire. However, only 358 questionnaires were returned on time by the respondents and 2 questionnaires were rejected due to incomplete responses. Therefore, the response rate of this study is 93.7% as shown in Table 7.

4.2 Analysis of Respondents

Descriptive statistical analysis was conducted to analyse the demographic information of the respondents.

4.2.1 Respondents' Gender

Table 8. Frequency Distribution of Respondents by Gender

Items	Frequency	Percent (%)
Male	178	50.0
Female	178	50.0
Total	356	100.0

Table 8 shows the gender distribution of all respondents involved in this study. A total of 356 respondents had provided their responses to the questionnaire with 178 respondents (50.0%) were male and 178 respondents (50.0%) were female. This indicates a similar distribution across both genders.

4.2.2 Respondents' Number of Children at Childcare Centres

Table 9. Frequency Distribution of Respondents by Number of Children at Childcare Centres

Items	Frequency	Percent (%)
1	326	91.6
2	30	8.4
Total	356	100.0

Table 9 indicates that 30 out of 356 respondents are sending 2 children to childcare centres. This is mainly because either the children are twins or the age gap of the children is near. Whereas, the majority of parents only have one child who is sent to childcare centres.

4.2.3 Respondents' Family Income

Table 10. Frequency Distribution of Respondents by Family Income

Items	Frequency	Percent (%)
RM2000 – RM3000	130	36.5
RM3001 – RM4000	215	60.4
More than RM4000	11	3.1
Total	356	100.0

Table 10 indicates the frequency distribution of family income among the respondents. It can be seen that the majority of their family (60.4%) earns around RM3001 to RM4000 followed by the family income ranging between RM2000 to RM3000 (36.5%) and those who earn RM4000 and above (3.1%).

4.2.4 Respondents' Total Hours of Leaving Children at Childcare Centre

Table 11. Frequency Distribution of Respondents by Hours of Leaving Children at Childcare Centres

Items	Frequency	Percent (%)
5 – 10 Hours	354	99.4
More than 10 hours	2	0.6
Total	356	100.0

Table 11 shows that the majority of respondents (99.4%) sent their children to childcare centres between 5 to 10 hours. There were only 0.6 % of parents who sent their children to childcare centres for more than 10 hours per day.

4.3 Descriptive Statistics

This section describes the information about the factors or elements that influence the safety assurance level of childcare centres. The variable was measured using the descriptive statistics of mean (M) and standard deviation (SD).

Table 12. Descriptive Statistic of Variables

Variables	Mean	Std. Deviation
Safety Assurance	4.3199	0.44431
Caregiver	4.4230	0.46175
Physical Facilities	4.4096	0.45505
Environment	4.4136	0.47258
Food Safety	4.4417	0.47167

Table 12 shows the descriptive statistics for each variable investigated in this research. The highest mean was obtained by food safety (M = 4.4417, SD = 0.47167). whereas, the second highest mean was recorded by caregivers (M = 4.4230, SD = 0.46175) followed by environment (M = 4.4136, SD = 0.47258) and physical facilities (M = 4.4096, SD = 0.45505). Finally, the lowest mean was obtained by safety assurance (M = 4.3199, SD = 0.44431).

4.4 Correlation Analysis

According to [30], correlation analysis is a statistical test that measures the strength of a relationship between two variables. For this purpose, [31] suggested that the Pearson's Correlation Analysis is one of the effective methods to determine the direction, strength, and significant relationship between variables.

Table 13. Pearson's Correlation Analysis

	Caregiver	Physical Facilities	Environment	Food Safety	Safety Assurance
Caregiver	1				
Physical Facilities	0.241**	1			
Environment	0.660**	0.237**	1		
Food Safety	0.388**	0.749**	0.375**	1	
Safety Assurance	0.560**	0.429**	0.619**	0.526**	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 13 presents the correlation analysis results of this study. Based on [32], a Pearson's Correlation value of less than 0.30 indicates a weak relationship, between 0.30 to 0.50 indicates a moderate relationship, and any value greater than 0.50 indicates a strong relationship between the variables. The results confirmed that safety assurance has significant positive correlations with all variables. In this regard, strong relationships can be seen with caregiver (0.560), environment (0.619), and food safety (0.525) while physical facilities demonstrate a moderate relationship with safety assurance (0.455).

4.5 Multiple Regression Analysis

Table 14 shows the results of multiple regression analysis used to test the hypotheses of this study.

Table 14. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.715 ^a	0.512	0.506	0.31224

Table 15. ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.861	4	8.965	91.957	0.000 ^b
	Residual	34.221	351	0.097		
	Total	70.028	355			

Table 16. Multiple Regression Analysis

Independent Variable	B	N	Sig.
Caregiver	0.190	356	0.000
Physical Facilities	0.138	356	0.013
Environment	0.357	356	0.000
Food Safety	0.189	356	0.001

Based on the results in Tables 14, 15, and 16, the coefficient showed by R is 0.715 and F is 91.957 with a significant level of less than $p < 0.05$. It suggests that all independent variables in this study significantly influence the safety assurance level of childcare centres. This is evident by caregivers ($\beta = 0.190$, $p < 0.050$), physical facilities ($\beta = 0.138$, $p < 0.050$), environment ($\beta = 0.357$, $p < 0.050$), and food safety ($\beta = 0.189$, $p < 0.050$). Thus, it can be concluded that caregivers, physical facilities, environment, and food safety are the strongest factors that influence the safety assurance level in childcare centres.

4.5 Hypotheses Findings

The hypotheses testing procedure was conducted in order to determine whether to approve or reject the research hypotheses. Table 17 shows the findings of the tested hypotheses.

Table 17. Hypotheses Findings

Hypotheses	Accepted/Rejected
H1: There is positive and significance relationship between caregiver and safety assurance level in a child care centres.	Accepted
H2: There is positive and significance relationship between physical facilities and safety assurance level in a child care centres.	Accepted
H3: There is positive and significance relationship between environment and safety assurance level in a child care centres.	Accepted
H4: There is positive and significance relationship between nutrition and safety assurance level in a child care centres.	Accepted

5 Discussion

The data collection process of this study was conducted within one week via a questionnaire which was distributed to the respondents selected among parents who subscribe to the services offered by licensed childcare centres in Perak. Based on the sample size of 377 parents, a total of 380 sets of questionnaire were distributed to the respondents and 358 questionnaires were retrieved within the duration of time given, with 2 questionnaires were rejected due to incomplete responses. Thus, a total of 356 questionnaires were used for further analysis, constituting to a response rate of 93.7%.

All data were analysed using the SPSS 24.0 software. The questionnaire was found to have acceptable and good reliability. Results of the Pearson's Correlation Analysis further indicate significant positive relationships between the independent variables (i.e., caregivers, physical facilities, environment, and food safety) with the dependent variable (i.e., safety assurance level of childcare centres). The research hypotheses were tested using multiple regression analysis to determine whether to accept or reject each hypothesis. The following section discusses about the findings in line with the research objectives.

Research Objective 1: To identify the influence of caregivers towards the safety assurance level at childcare centres.

Results from the multiple regression analysis indicate that there is a significant positive relationship between caregivers and the safety assurance level at childcare centres ($\beta = 0.190$, $p < 0.050$). Thus, Hypotheses 1 is accepted.

Research Objective 2: To identify the influence of physical facilities towards the safety assurance level of childcare centres.

Results from the Pearson's Correlation Analysis showed that there is a moderate relationship between physical facilities and the safety assurance level at childcare centres. The multiple regression analysis also posits a positive significant correlation ($\beta = 0.138$, $p < 0.050$) between the two variables.

Research Objective 3: To identify the influence of environment towards the safety assurance level at childcare centres.

The findings indicate that there is a significant positive relationship between environment and the safety assurance level at childcare centres ($\beta = 0.357$, $p < 0.050$). Thus, Hypotheses 3 is supported.

Research Objective 4: To identify the influence of food safety towards the safety assurance at childcare centres.

Results from the Pearson's Correlation Analysis showed that there is a strong relationship between food safety and the safety assurance level at childcare centres. The multiple regression analysis further indicates a positive significant correlation ($\beta = 0.189$, $p < 0.050$) between the variables.

6 Conclusion

The purpose of this study was to determine whether caregivers, physical facilities, environment, and food safety influence the safety assurance level at childcare centres. The results indicate that three factors (i.e., caregivers, environment, and food safety) have strong and significant relationships with safety assurance. Whereas, although physical facilities have recorded a positive and significant relationship with safety assurance, the correlation between these variables was found to be moderate.

Acknowledgement:

This research was supported by the Ministry of Higher Education (MoHE) Malaysia through the Fundamental Research Grant Scheme (FRGS/1/2017/SS03/UUM/02/14).

References:

- [1] Chen, J. H. (2013). Multiple childcare arrangements and health outcomes in early childhood. *Maternal and Child Health Journal*, 17(3), 448–455. doi: 10.1007/s10995-012-1016-9
- [2] Sulaiman, Y., Perumal, S., Ghani, N. H. A., Ismail, M. Y. S, Musa, R., (2017). A conceptual paper on safety and quality assurance model in Malaysian child care centres. *International Journal of Economic Research*, 14(19), 333-340.
- [3] Sulaiman, Y., Othman, A. R., Perumal, S., Hussain, Z., (2013). Escalating the Employee Job Satisfaction through Internal Market Orientation: A Childcare Centre Perspective. *Jurnal Teknologi (Sciences and Engineering)* 64(2), 133-138.
- [4] [9]Hariandja, M. E. (2002). *Manajemen Sumber Daya Manusia*. Jakarta: Grasindo.
- [5] Department of Social Welfare Malaysia (2018). *KursusAsuhanPermata*. Retrieved from www.jkm.gov.my
- [6] Afreen, F. (2011). Assessment of safe child friendly environment of day care centres in government and non-government organizations of Dhaka city. *BracUniversity, Thesis*.
- [7] Sulaiman, Y., Othman, A., Perumal, S., & Hussain, Z. (2013). Escalating the employee organisational commitment through internal market orientation: Childcare centre's perspective. *Int. J. Bus. Soc. Sci*, 4(6), 257–262. Retrieved from http://www.ijbssnet.com/journals/Vol_4_No_6_June_2013/31.pdf
- [8] Department of Social Welfare Malaysia (2018). *KursusAsuhanPermata*. Retrieved from www.jkm.gov.my
- [9] Tsao, C. (2015). Predicting Infant/Toddler Social-Emotional Outcomes from Intrapersonal Caregiver Characteristics and Child Care Quality. Retrieved from <https://escholarship.org/uc/item/90k825js>
- [10] Garzon, D. L. (2005) Contributing factors to preschool unintentional Injury. *Journal of Pediatric Nursing*, 20 (6), 441-447.
- [11] Khambalia, A., Joshi, P., Brussoni, M., Raina, P., Morrongiello, B. and Macarthur, C. (2006). Risk factors for unintentional injuries due to falls in children aged 0–6 years: a systematic review. *Injury Prevention*, 12, 378–385.

- [12] Alkon, A., Genevro, J. L., Tschann, J.M., Kaiser, P., Ragland, D. R. and Boyce, W. T. (1999). The epidemiology of injuries in 4child care centres. *Arch PediatrAdolesc Med*, 153, 1248-1254
- [13] Runyan, C. W., Gray D. E., Kotch J. B. and Kreuter, M. W.(1991). *American Journal of Public Health*, 81 (8), 981-985.
- [14] Ramdzan, S., Liew, S., & Khoo, E. (2014). Unintentional injury and its prevention in infant: Knowledge and self-reported practices of main caregivers. *BMC Pediatrics BMC Pediatr*, 14(132), 132-132.
- [15] Morrongiello, B. (2005). Understanding Unintentional Injury-Risk in Young Children. The Nature and Scope of Caregiver Supervision of Children at Home. *Journal of Pediatric Psychology*, 31(6), 529-539.
- [16] Sulaiman, Y., Rahman, M. A., Mat, N. K. N. (2020). Enhancing student active learning in consumer behaviour class using 5E learning cycle: A conceptual paper. *WSEAS Transactions on Environment and Development*, 16 (53), pp. 520-529.
- [17] Sulaiman, Y., Masri, M., Yusr, M. M., Mustafa, S. A., Salim, N. (2017). The relationship between marketing mix and consumer preference in supplement product usage. *International Journal of Economic Research*, 14(19), 381-393.
- [18] Sulaiman, Y., Bakar, N. A. A., Ismail, M. Y. S., Mat, N. K. N., & Musa, R., (2017). The function of marketing mix and consumer preferences on healthy food consumption among UUM students. *International Journal of Economic Research*, 14(19), 103-122.
- [19] Mutalib, M., (2017). Regulating child care centres in Malaysia: is there a bright future? *International Journal for Studies on Children, Women, Elderly and Disabled*, 1 (January) ISSN 0128-309X.
- [20] Ceglowski, D. & Bacigalupa, C. (2002). Four Perspectives on Child Care Quality. *Early Childhood Education Journal*, 30 (2), 87-92.
- [21] Sulaiman, Y., Kan, W. P. E., Salimon, M. B. (2020). Purchase Intention towards Organic Food among Undergraduate Students. *WSEAS Transactions on Environment and Development*, 16, 734-743.
- [22] Azhari, N. F. N., Qamaruzaman, N., & Hassan, A. (2015). The Quality of Physical Environment in Workplace Childcare Centers. *Procedia - Social and Behavioral Sciences*, 202, 15–23. <https://doi.org/10.1016/j.sbspro.2015.08.204>
- [23] Sulaiman, Y., Jauhari, N., (2021). The Factors Influencing Mobile Banking Usage among University Staff. *WSEAS Transactions on Business and Economics*, 18, 179-189.
- [24] Ball, D. J. (2002). Playgrounds – Risks, Benefits and Choices. Report No. CRR 426/2002 (Sudbury, Suffolk: HSE Books).
- [25] Zahyah, H., & Siti, N. I. (2014). Inside the Child Care Center: How to Ensure Quality Child Care Practices. *International Journal of Education*, 8 (1), 74-83.
- [26] Abdghani, N. H., Nikmat, N. K., Sulaiman, Y. (2019). Export performance: The role of product quality and market orientation. *WSEAS Transactions on Business and Economics* 16 (25), 215-225.
- [27] Gubbels, J. S, Kremers, S.P., Stafleu, A., Dagnelie, P. C, De Vries, N. K., & Van Buuren, S. (2010). Child-care use, and the association with body mass index and overweight in children from 7 months to 2 years of age. *Int J Obes* 34 (10), 1480–1486.
- [28] Vereecken, C. A., & Maes, L (2003). A Belgian study on the reliability and relative validity of the Health Behaviour in School-Aged Children food-frequency questionnaire. *Public Health Nutr*, 6, 581–588.
- [29] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational & Psychological Measurement*, 30, 607-610.
- [30] Griffith, D. A. (2003). Spatial Autocorrelation and Spatial Filtering: Gaining Understanding through Theory and Scientific Visualization. New York: Springer-Verlag.
- [31] Pallant, J. (2005). SPSS survival manual a step by step guide to data analysis, using SPSS for Windows (Version 12), 2nd edition, Australia.
- [32] Sekaran, U., & Bougie, R. (2016). Research Methods for Business: A Skill Building Approach (7th Ed). USA: Wiley.
- [33] Sulaiman, Y., & Lie, N. K. (2021). Quality assurance among childcare employees in Selangor. *WSEAS Transactions on Business and Economics*, 18, 1498-1511.
- [34] Mat, N. K. N., Sulaiman, Y., Ghani, N. H. A., Mohamad, M. (2018). Halal Consumption Pattern Determinants: Sequential Mediating

effects of Muslim Lifestyle, Trust and Risk Perception. *Journal of Social Sciences Research, Special Issue* (6), 444-453.

- [35] Sulaiman, Y., Jamil, N. A. M., Othman, A. R., & Musa, R. (2020). The Influence of Green marketing, Syariah Compliance, Customer's Environmental Awareness and Customer's Satisfaction towards Muslim Consumer Purchasing Behaviour in Kedah. *WSEAS Transactions on Business and Economics*, 17, 194-204.
- [36] Cleveland, G., Gunderson, M., & Hyatt, D. (2003). Union effects in low-wage services: Evidence from Canadian childcare. *Industrial and Labor Relations Review*, 56(2), 295-305.
- [37] Marquette University (2022). Child care center: The creative curriculum. Retrieved from <https://www.marquette.edu/child-care-center/curriculum.shtml>

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

Yaty Sulaiman was responsible for the conceptualisation, funding acquisition, project administration, resources, and supervision.

Nurul Ain Md Basri was responsible for data curation, formal analysis, methodology, validation, and writing the original draft.

Mohd Yusri Shahril Ismail was responsible for reviewing the article.

Alysha Arif was responsible for editing the article.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

This research was supported by the Ministry of Higher Education (MoHE) Malaysia through the Fundamental Research Grant Scheme (FRGS/1/2017/SS03/UUM/02/14).

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)

This article is published under the terms of the Creative Commons Attribution License 4.0

https://creativecommons.org/licenses/by/4.0/deed.en_US