

Preschool Selection Criteria Amongst Parents using Best Worst Method (BWM)

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Abstract

Preschool education provides various types of benefits such as curriculum, environment, teacher's performance and services that could contribute to unstandardized standards of education. Thus, identifying the ideal criteria of preschool preferences amongst parents will help the preschool management to reconstruct the criteria based on the finding. The seven criteria selected from the previous study are, provide teaching in English, religious value, safety and security, curriculum and facilities, brand image and fees, quality of teachers and operation hours and location. 102 parents in Klang Valley, Malaysia, rural and developed areas with variety ranges of family household income participated in the survey. The data was then analyzed using Best Worst Method (BWM). The result shows that the ideal criteria in selecting preschool is 'safety and security, meanwhile 'Brand image and fees' is the least important criteria. Furthermore, parents in both developed areas and rural areas also choose 'Safety and security as the most important criteria. In addition, the preferences of preschool based on gender, generation, area of residence, occupation and household incomes are also reported in this paper.

Keywords

Best Worst Method, Early-education, Preschool, Parents' Preference.

1. Introduction

Early education plays a crucial role in learning self-care skills as well as in creating healthy individuals for their mental and communities that provide their safety (Aydos and Tugrul, 2015). Preschool education consists of many elements that will influence the factor of choosing the preschool, and each has the weighting of its importance. Many problems emerged when each preschool provides various types of benefits such as curriculum, environment, teacher's performance and services that could contribute to unstandardized standards of education (Ismail et al., 2018). Choosing the right preschool for children is important to make sure the children received basic education of knowledge and social before entering primary school. Furthermore, in Malaysia, each child must enter preschool before starting primary school. Thus, to achieve a quality preschool, assessments are needed to acknowledge academic, social-

emotional and physical development for students (Thai, 2018). Department of Social Welfare Malaysia is the responsible department to provide registration, inspection and regulation and related matters to ensure children's health, protection and overall development of preschool. Table 1 shows preschool that registered under the Department of Social Welfare Malaysia. Public preschool stated includes the preschool in parent's workplace and 1 Malaysia preschool while for private preschool class sizes are normally smaller.

Table 1: Preschool that registered under Department of Social Welfare Malaysia.
 (Department of Social Welfare Malaysia, 2020)

State	Number of preschools registered	
	Private	Public
Kuala Lumpur	92	49
Selangor	1230	36
Negeri Sembilan	113	6
Melacca	88	14
Johor	350	11
Kedah	129	10
Perlis	27	2
Perak	253	5
Pahang	127	15
Penang	101	13
Kelantan	131	4
Terengganu	136	9
Sabah	199	17
Sarawak	116	12
Labuan	14	5

Parents are now conscious that preschool education would be the most crucial level for developing children's emotions, physical, social and mental growth before they join formal primary education. In 2003, the Ministry of Education introduced the primary and secondary schools to use the English language in Mathematics and Science subjects. This situation raises concerns about the preferences and factors that would influence the preschool choice of education for their children (Dahari and Ya, 2011).

Amongst factors, safety is a crucial aspect for parents in choosing the preschool (Mwoma et al., 2018). Besides, by having a safe environment, students will feel at ease and comfortable attending the preschool session. Moreover, parents also prefer to choose high quality of education and other specialized curriculum knowledge instead of socializing (Ismail, 2013). For effective curriculum performance for children, developmentally appropriate early education activities were essential. Both short-term and long-term curriculum, emotional and social gains for the wellbeing of young children have been correlated with high-quality early education. Children who began early and had longer and more intensive curriculum were the most productive program and showed better intellectual test results (Smith, 2014). Thus, the purposed of this study is to identify the parents' preference of preschool selection criteria using Best Worst Method (BWM) and demonstrate the findings based on parents' geographical location, background, social and cultural-demographic.

2. Literature Review

According to Valentine (2016), parental roles are crucial to the decisions of parents on participation in their children's education. The development and education of students are affected by the interactions they have in the various experiences surrounding them, therefore, the relevance of choosing the right early learning experiences for future academic performance is crucial. Hsieh (2008) claimed that these factors preferences are different for parents depending on their socioeconomic or racial background. Studies indicate that wealthy families may benefit more from this process because these families have a greater connection to high-quality knowledge (Broccolichi and Van Zanten, 2000), greater choices in transportation and more knowledge with selections and opportunity. On the other hand, low-income families are at a disadvantage because they have less information connection, to determine school quality, and are more probably to take priority on non-academic aspects when selecting a school (Elacqua et al., 2006). Thus, this study included the classification of household income based on the group of B40, M20 and T20 to gain the preferences

of each category. The classification of B40, M40 AND T20 are according to international practice including the World Bank. In addition, age classification is based on a generation that consists of Baby Boomers (56-74 years old), Generation X (40-55 years old), Millennial Generation (26-39 years old) and Generation Z (less than 25 years old) used to obtain the preferences of each generation.

2.1 Preschool Selection Criteria

Since high-quality early childhood services may enhance future education and socioeconomic levels of children (Hsieh, 2008), preschool education is an opportunity for parents to make sure the success of their children. Therefore, parents have to survey the suitable preschool since preschool selection is complex and subjective based on available knowledge, social networks, research strategy, previous observations and specific child characteristics (Zangger and Widmer, 2020). The preschool selection criteria obtained based on previous studies from the year 2011 until 2019 are as follow:-

(a) Provide Teaching in English (Mustafa and Azman, 2013; Dahari and Ya, 2011; Ismail, 2013; Carlin et al., 2019) Robitaille (2009) claimed that preschool is the right time to initiate activities for English learners before integrating their language skills and reading abilities into a more challenging to control structured program. Interacting with classmates in the preschool environment is beneficial for many developmental factors, and those classmates with more developed language abilities may be good language examples for beginners to their classmates (Greenberg and Rodriguez, 2007). Although first and second language overlap can exist, studies record that children are able to easily distinguish the two languages and show the ability to decide which language will be used under which situations and help as interpreters for organizations or family members, to encourage friends or siblings who do not learn as much English as they do (Robitaille, 2009).

(b) Religious Value (Kamaruddin et al., 2017; Mustafa and Azman, 2013; Dahari and Ya, 2011; Hofflinger et al., 2020)

In shaping human behavior patterns religion plays an important role in individuals. Since Muslim parents expect Islamic information to be developed on their children (Dahari and Ya, 2011), the teaching of religion among children is considered among the most essential form of family life and is mainly the parent's duty (Mustafa and Azman, 2013). This supported by Manca (2014) indicated that parents enroll their children in religious preschools due in part to the need to maintain religious integrity to enhance their knowledge about the religion and religion create a complementary value with moral values.

(c) Safety and Security (Kamaruddin et al., 2017; Dahari and Ya, 2011; Bassok et al., 2018; Hofflinger et al., 2020; Thai, 2018)

Making preschools secure helps children to look forward to a pleasant environment in which collaborative and innovative thinking is supported (Battistich et al., 2004). By promoting protection at the school, provides a flexible environment for children to discover, learn and develop. School physical and environmental infrastructure also is critical for preschool children since this age group of children cannot handle their safety by themselves because they are in the early stages of their physical and psychological development (Konakli and Ülçetin, 2016).

(d) Curriculum and Facilities (Kamaruddin et al., 2017; Ismail, 201; Bassok et al., 2018; Hofflinger et al., 2020; Thai, 2018; Carlin et al., 2019; He and Giuliano, 2018)

A successful preschool curriculum must also provide effective value-related goals to help develop children's socioemotional skills such as in specific respect, commitment, joy, teamwork, partnership, friendship and integrity that must be taught to students through a framework of quality teaching by not only focusing in academic part (Çimen and Koçyiit, 2010). Meanwhile, facilities help the student to improve their thinking skills about cognitive, affective, and psychomotor (Broyles, 2004). Outdoor play experiences in childhood are important because they offer ways for young children to work their entire body, including body balance, locomotion and stability skills to strengthen the physical growth of children (Wijenje et al., 2018).

(e) Brand Image and Fees (Mustafa and Azman, 2013; Forry et al., 2014; Hofflinger et al., 2020)

Parents get their knowledge and build their perspective on a preschool's success or reputation based on the attempts the preschool has made to describe the identity through the brand. Parents who may not know the preschool can make a decision based on branding assumptions, which is why preschool branding is critical (O'Hara, 2018). Unique and consistent branding of the preschool will represent a degree of professionalism, and therefore will interpret the organization's serious concern for standards of excellence. The parents trust preschools with a well-known reputation

for academic achievement. The general parent population in Malaysia would enroll their children on public preschools, such as in government primary schools or preschools accessible at the office building because fewer fees would need. Parents in the middle class might aim for an inexpensive preschool near their home or workplace. But those rich parents may intentionally enroll their children to branded on costly preschools because they can manage to see the correlation or value in what investment can deliver, the advantages and services that branded institutions can offer (Dahari and Ya, 2011).

(f) Quality of teachers (Kamaruddin et al., 2017; Mustafa and Azman, 2013; Dahari and Ya, 2011; Ismail, 2013; Hofflinger et al., 2020; Thai, 2018; Carlin et al., 2019)

Teachers are significant contributing factors for good student outcomes. Teacher quality in early childhood and its impact on student learning performance indicate that teacher quality influences academic progress significantly and curriculum design (Charles, 2011). A warm, friendly and respectful teacher-student partnership will help the growth of students by providing them with social stability to fully participate in school development and learning and by scaffolding the development of the student in different developmental fields (Long, 2017). Given that teacher quality is an influential factor in student achievement, parents normally pay a lot of attention to teacher quality and teaching quality (Dahari and Ya, 2011).

(g) Operation Hours and Location (Dahari and Ya, 2011; Forry et al., 2014; Bassok et al., 2018; Thai, 2018; He and Giuliano, 2018)

A rising number of working parents make use of preschool operating hours for their children. Parents who are more concerned with the convenience of the location, hours of operation and the costs are more highly probable to choose the preschool with this arrangement (Park, 2017). Preschools with extended hours of operation and flexibility allow parents to work without worrying and fulfill the working-time demands of parents and they would like to see these preschool criteria become more accessible. The location of a preschool influences the estimated cost of going to preschool and has been described as one of the most important factors for deciding the preference of parental preschool since parents agree that location or ease of traveling would be the most significant criteria for selecting a school as their first option (He and Giuliano, 2018). Parental employment and working hour flexibility are major elements for choosing the location of preschool for their children.

3. Methods

Descriptive research was carried out in this study and this analysis contributed detailed and reliable study results. The targeted respondent for this study is the parents of children enrolled in preschool or would enrolling their children in preschool in Klang Valley, Malaysia. Klang Valley is selected for this study since it has the greatest number of preschools registered under the Department of Social Welfare Malaysia as stated in Table 1 and has the highest number of children that is 2.27 million and 759.7 thousand parents (Department of Statistics Malaysia, 2018). A cross-sectional design was implemented in this research. The convenience sample size for this study is 102 respondents distributed via Google Form to respondents using various platforms due to pandemic Covid19.

The data was analyzed using the BWM method to determine the ideal criteria. It is involved respondents being asked from each criterion to select one best and one worst criteria. Using the least comparisons, the BWM is used to obtain weights of parents' preference criteria which is the main focus of this method compared to other MCDM techniques (Anjum et al., 2020).

4. Data Analysis and Discussion

Out of 139 surveys received, 36 surveys has not met the requirement. Therefore, only 102 surveys were analyzed using the BWM method. The questionnaires were distributed via Google Form using few social media platforms such as WhatsApp, Twitter and also face-to-face. For the face-to-face method, 32 surveys were distributed, however, only 24 surveys were completed which is a 75% response rate. Meanwhile, for an online platform, there are 36 rejected surveys out of 114 total surveys received. The collected data was then converted in .csv format to be analyzed using the BWM method through Microsoft Excel.

4.1 Demographic Profile of Respondent

Table 2 shows frequencies and percentages of respondents' demographics. 66.7% respondent is female while 33.3% is male. The majority of the respondent is the millennial generation, 26-39 years old (46.1%) followed by Generation X, 40-55 years old (41.2%), Generation Z, age less than 25 (10.8%) and Baby Boomers, 56 years old (2%). 63.7

percentage of parents stayed in the developed area while rural areas accounted for 36.3%. Based on the result, 40 parents working at a private company. This is followed by self-employed parents (26.5%), government employees (24.5%) and the Business Owner/Entrepreneur consist of 9.8%. The highest percentage of household income is M40 consists of 46.1%, followed by B40 (36.3%). The lowest percentage of the respondent is coming from T20 that is 17.6%. Most of the respondents had one child that is 32.45 followed by two children (24.5%), three children (23.5%) and the lowest percentage is more than 5 children that is 8.8%.

Table 2: Frequencies and percentage of respondent's demographic

Variable	Frequency	Percentage (%)
Gender		
i. Male	34	33.3
ii. Female	68	66.7
Age		
i. Less than 25 (Generation Z)	11	10.8
ii. 26-39 (Millennial generation)	47	46.1
iii. 40-55 (Generation X)	42	41.2
iv. More than 56 (Baby Boomers)	2	2
Area of Residence		
i. Developed Area	65	63.7
ii. Rural Area	37	36.3
Occupation		
i. Private Company Employee	40	39.2
ii. Government Employee	25	24.5
iii. Business Owner/Entrepreneur	10	9.8
iv. Self-employed	27	26.5
Household Income		
i. Less than RM4,850 (B40)	37	36.3
ii. RM4,850 – RM10,970 (M40)	47	46.1
iii. More than RM10,970 (T20)	18	17.6
Number of Children		
i. 1	33	32.4
ii. 2	25	24.5
iii. 3	24	23.5
iv. 4	11	10.8
v. More than 5	9	8.8

4.2 Parents' Criteria Preference

The best criteria are defined by each respondent as the most important criteria in preschool selection, while the worst criterion is the least important criteria.

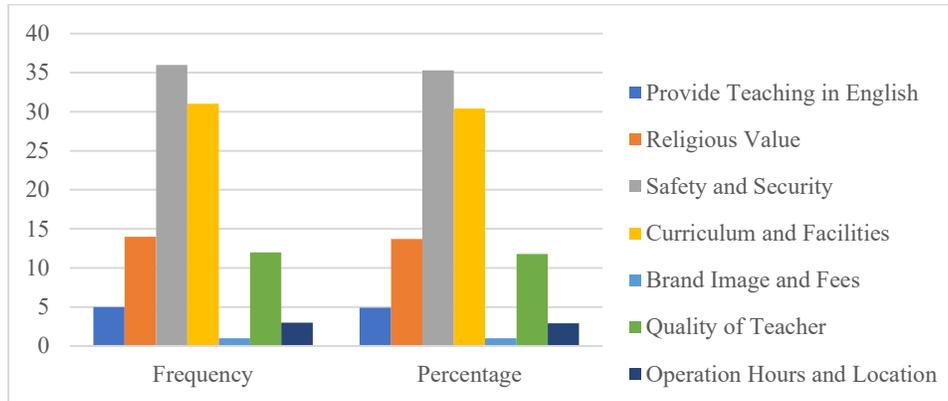


Figure 1: Most important selected criteria

Figure 1 shows the highest selected criteria is 'safety and security' with 35.5%, followed by 'curriculum and facilities' criteria consist of 30.4%. The third most important criteria are 'religious value' (13.7%), followed by 'quality of teachers' (11.8%), 'provide teaching in English' (4.9%), 'operation hours and location' (2.9%) and 'brand image and fees' (1%).

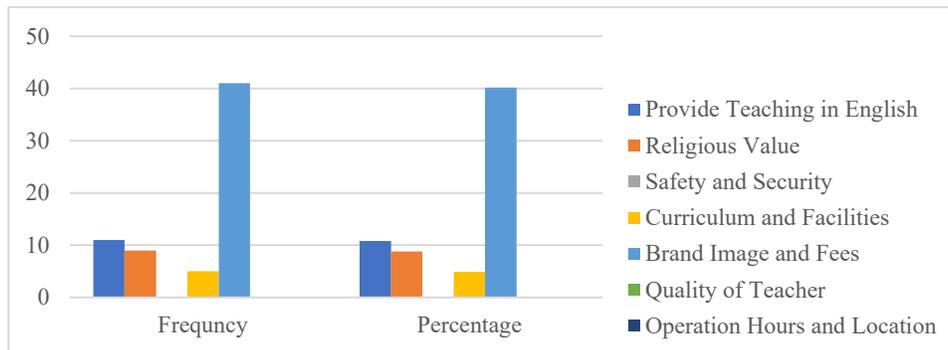


Figure 2: Least important selected criteria

As shown in Figure 2, 'Brand image and fees' received the majority percentage in the least important criteria which is 40.2%. The second most reported least important criteria is 'operation hours and location' criteria which are 35.5%. Next is 'provide teaching in English' reported that having 10.8%, followed by 'religious value' criteria consists of 8.8%, and 'curriculum and facilities' criteria which is 4.9%. However, for criteria 'safety and security' and 'quality of teachers' none of the respondent selected these criteria as the least important. That shows how significant these criteria are.

4.3 Weighted and Consistency Ratio

By using a rating between 1 and 9, the respondents are asked to compare selected most important criteria with any of the other criteria. The categories of preference of parents in selecting preschool may be classified based on their background and demographic on this basis. Criteria analysis is a quantitative approach applied to a specific set of

variables by which the researcher identified which criteria is the most preferential in preschool selection (van de Kaa, Kamp, and Rezaei, 2017).

Table 3: Ranking of Best Worst Method

Criteria	Weight	Rank
Provide Teaching in English	0.13373324	5
Religious Value	0.15489485	3
Safety and Security	0.20022729	1
Curriculum and Facilities	0.18359761	2
Brand Image and Fees	0.08831158	7
Quality of Teacher	0.13735582	4
Operation Hours and Location	0.10187960	6
K_{si}	0.13365232	
Consistency Ratio (CR)	0.035832	

By having a pair-wise comparison between criteria, the accuracy is evaluated and consistency is analyzed within each pair-wise relation for each criterion. Seven criteria of the Best Worst Method are accomplished with the certainty of the weights. Since the CR value is closer to zero, it shows consistency and has higher reliability of the comparison. As shown in Table 3, for the ideal criteria or the most important criteria in selecting preschool is ‘safety and security’ because that criteria received the highest weight. Then, it is followed by ‘curriculum and facilities’, ‘religious value’, ‘quality of teacher’, ‘provide teaching in English’ and ‘operation hours and location’. ‘Brand image and fees’ get the lowest weight that shows it is the least important criteria in selecting a preschool.

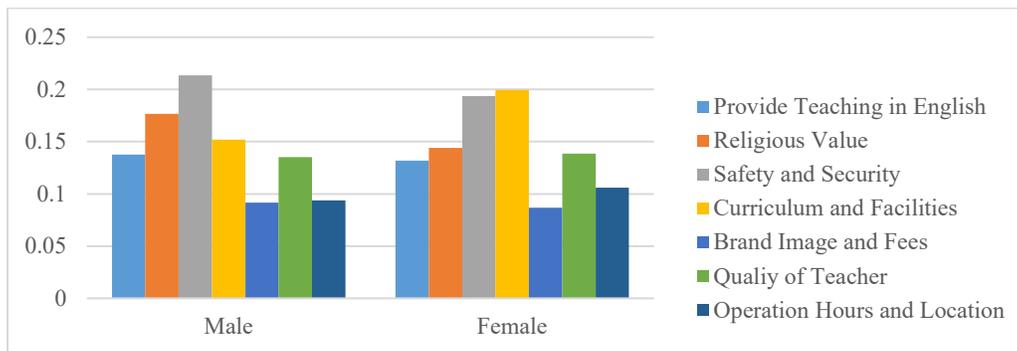


Figure 3: Average weights of criteria based on gender

Figure 3 shows the average weights of criteria based on gender. The most important criteria for males is ‘safety and security’ while for the female is ‘curriculum and facilities’. It can be concluded that both criteria ‘safety and security’ and ‘curriculum and facilities’ are important to females since the small differences between the two criteria are only by 0.005. Males and females have selected the same least important criteria which are ‘brand image and fees’.

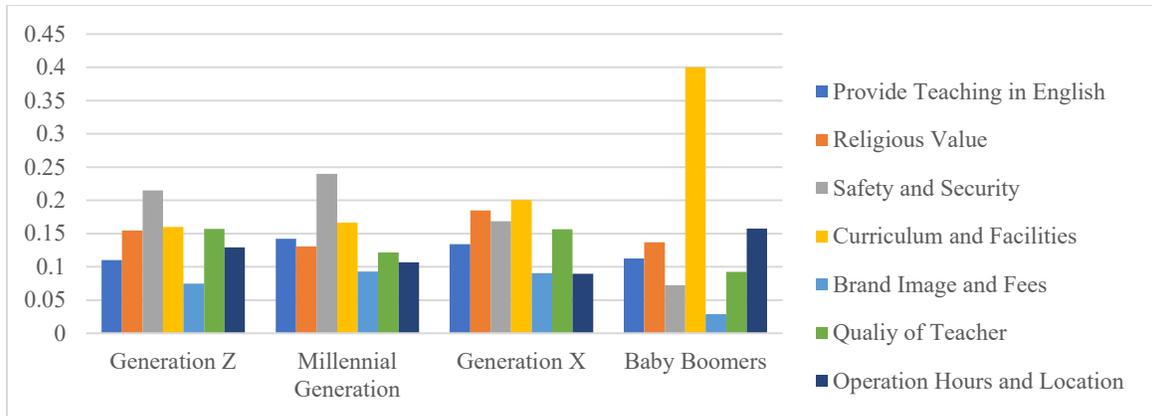


Figure 4: Average weights of criteria based on age

The results in Figure 4 shows that generation z and millennial generation choose ‘safety and security’ as the most important criteria while generation x and baby boomers choose ‘curriculum and facilities’ as the most important criteria. The second most important criteria for the millennial generation and generation Z are ‘curriculum and facilities’. Meanwhile, for generation X is ‘curriculum and facilities’ and baby boomers choose ‘operation hours and location’. In addition, for the least important criteria, all generations selected the lowest average weight in ‘brand image and fees’.

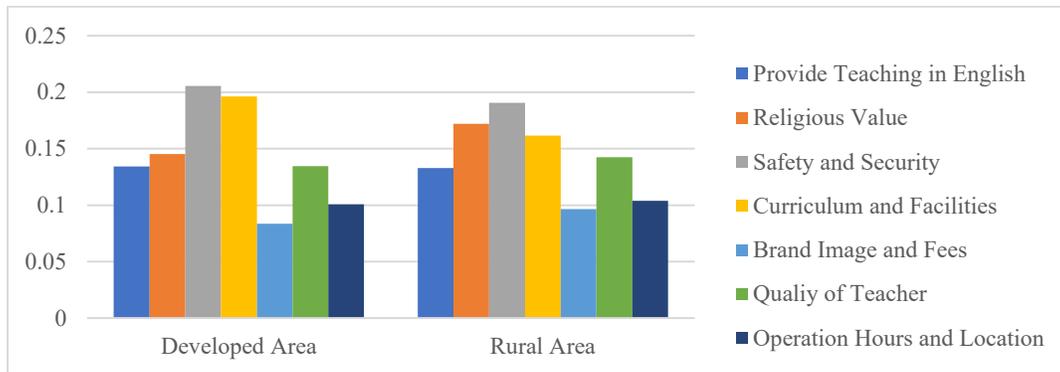


Figure 5: Average weights of criteria based on the area of residence

It shows that in Figure 5 ‘safety and security’ is the most important criteria for both residences in developed areas and rural areas. However, the average weight for the developed areas is higher than rural areas by 0.1. Furthermore, the second most important criteria for the developed areas is ‘curriculum and facilities’ while rural areas selected ‘religious value’ criteria. However, both residences have selected the same least important for third until sixth criteria which are ‘brand image and fees’, ‘quality of teacher’, ‘provide teaching in English’ and ‘operation hours and location’.

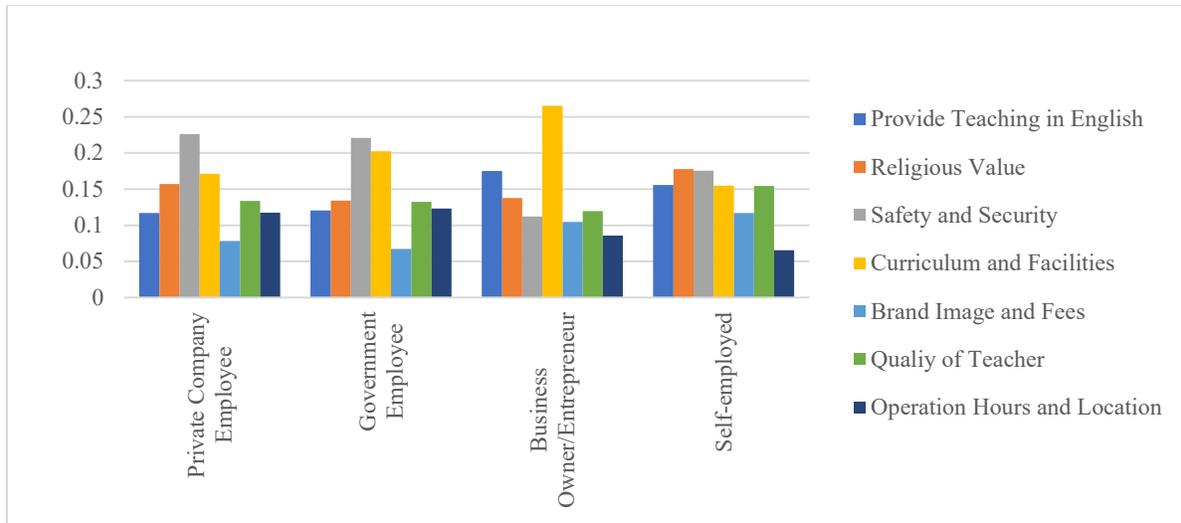


Figure 6: Average weights of criteria based on occupation

Both private company employees and government employees have selected ‘safety and security’ as the most important criteria and ‘brand image and fees’ as the least important criteria based in Figure 6. They also shared the same rank for other criteria respectively. In addition, a group of ‘business owner/entrepreneurs’ selected ‘curriculum and facilities’ as the most important criteria with a high result of average weight. Meanwhile self-employed is choosing ‘religious value’ criteria. Both business owner/entrepreneur and self-employed mutual selected the same least important criteria that is ‘operation hours and location’.

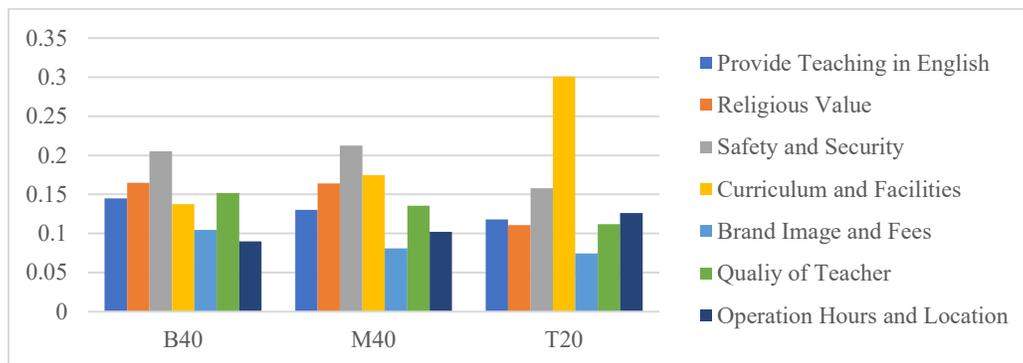


Figure 7: Average weights of criteria based on household income

From Figure 7, there is a significant difference between each household income group. The most important criteria for B40 and M40 is ‘safety and security’ while for T20 that is ‘curriculum and facilities’. M40 and T20 selected the same least important criteria that is ‘brand image and fees’. However, the household income of B40 selected ‘operation hours and location’ as their least important criteria.

5. Conclusion

In nutshell, the ideal criteria for selecting preschool in Klang Valley, Malaysia are safety and security, curriculum and facilities, religious value, quality of teacher, provide teaching in English, operation hours and location and brand image and fees. Criteria ‘safety and security’ selected as most important criteria for parents, male gender, gen Z, gen Y, both developed and rural area, private company and government employee, B40 and M40 group of household incomes to enroll their children in preschool in Klang Valley. This is to ensure a safe environment for the children’s education and the future. Having good safety and security, helps the children to feel more comfortable and secure in doing activities at the preschool. Moreover, ‘curriculum and facilities’ criteria can be considered important since only 2%

marginally lower than ‘safety and security’ and voting in by the rest of the groups. Then, the least important criteria is ‘brand image and fees’, which score the highest percentage in the least important criteria and are selected insignificant by all demographic variables. Even though brand image and fees help develop the identity for those unfamiliar with that preschool and match up with parents’ specific objectives, it seems that many parents are willing to pay extra to ensure that their child has the best quality of education, including both forms of educational and lifestyles, which they could not experience in their student days (Vijandren, 2017).

The outcome has implications for preschool providers to ensure a quality enhancement for their services. Moreover, the ideal criteria may provide some guidance for the government on the aspects that should be emphasized especially on demographic and social-economic.

Since the study is focused on parents in the Klang Valley, the finding may not be reliable for other states and cannot be generalized to the Malaysian context. In addition, convenience sampling applied in data collection has a higher degree of bias creates incapability of generalizing the population as a whole and has a high level of sampling error.

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Biographies

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Rohaizan Ramlan is a senior lecturer in Operations Management at the Faculty of Technology Management and Business, UTHM. She is also a member of the Centre of Research on Service and Operations Management. She pursued Manufacturing Information Technology studies at the Masters level in UTM in 2005. Her bachelor degree is in Computer Science BSc. (Hons.) in UTM. Rohaizan has multidisciplinary research interests that encompass production and operation management and decision making.

Shahryar Sorooshian is gained BSc, MSc and PhD in industrial engineering. He is a Lean six-sigma belt holder, a certified graduate technologist, and a certified professional in engineering management. Consequently, most of his research and consultation works are related to engineering management, industrial management, and

management/business engineering. Currently, he is an associate professor at the Department of Business Administration.