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Individual Project Paper

Daycare Center Selection using Hierarchical Decision Model

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ABSTRACT

One of the most important decision that families will ever make is choosing the best kind of day care for their children. This decision is faced by many as the number of dual-income and single parent households, and maternal employment continues to grow in the United States (US Census Bureau, 2013). Working parents are looking for an alternative that will provide the same quality care for their children in their absence. The objective of this paper is to develop a decision framework that can be used by families in the selection of a daycare center for their children.

A hierarchical decision model (HDM) was developed in which experts actively participated during the model development stage as well as provided judgments using weights for the criteria, subcriteria, and alternatives, using pairwise comparisons among the decision elements. Four prospective daycare centers are identified as alternatives. Common elements of daycare centers are identified and used as criteria and sub-criteria. Findings from this research show that staff qualification and program reputation are the top two indicators that influence the decision making process in choosing a daycare center, followed by a tie between base cost, health policy, and curriculum.

Findings from the case study used in this research resulted to the identification of the top alternative (Daycare Center N1) from the quantified expert judgments, both collectively and individually. But how robust is this result? Unfortunately, robustness check was not implemented in this research paper due to limitations in terms of time and resources. For future study, a sensitivity analysis of the model is recommended.

INTRODUCTION

The increasing maternal employment over the last 30 years has a direct relationship with the increasing need for non-parental care (US Census Bureau, 2013; Phillips, & Lowenstein, 2011). As the majority of parents with children under five become dependent on alternate caregivers, the task of selecting a child care arrangement is a decision that many parents are facing today. It is a very important decision as the quality of care for younger children has a known direct impact on their development. Many studies found a strong link between high quality care during the first five years to positive child cognitive and academic outcomes and this includes the long hours spent at daycare (Camilli, Vargas, Ryan, & Barnett, 2010; Ludwig & Miller, 2007; Phillips, & Lowenstein, 2011). This link has been well long established and much of the debate circles around the definition of a high quality care. The ultimate criterion is those features of early child care that foster positive developmental outcomes, with a fairly wide consensus of the sub-criteria including (1) the child-adult relationship and interactions or "process" quality, (2) structural features of care, and (3) the surrounding community and policy context (Phillips, & Lowenstein, 2011).

The decision framework using hierarchical decision model developed in this paper decomposes this complex decision into hierarchical levels, integrating the above mentioned criteria for high quality child care, and reaching a consensus for the best daycare care center alternative using quantified expert judgments.

METHODOLOGY

The decision making process of choosing a daycare center is a complex decision and is rarely made based on a single criterion. It involves evaluation of multiple, and often, conflicting objectives. The best alternative is a trade-off between these objectives and is subjective in nature. The hierarchical decision model (HDM) tool is an appropriate method for such complex, subjective, and multi-criteria decision making and is used in this research paper. HDM uses the same basic concept as the more well-known analytic hierarchy process (AHP) developed by Saaty (1980), but was developed using different pairwise comparison scales and judgment quantification techniques (Chen, & Kocaoglu, 2008).

Model Development

For the case study used in this paper, the HDM online tool from Portland State University ("HDM (Hierarchical Decision Model)", 2017) was used to aid in the development of the model, and systematic collection and quantification of expert judgments. Figure 1 below shows the final model developed using the online tool. It consists of four levels: mission (level 1), main-criteria (level 2), sub-criteria (level 3), and alternatives (level 4). In HDM, complex decision is broken down into levels of decision hierarchies, with the mission at the very top. In this case, the selection of daycare center. Decision elements contributing to the mission are then identified as main criteria which is the next level below in the hierarchy. In determining the main criteria, it is important that the decision elements at the same level be preferentially independent. The same process is applied in the identification of the sub-criteria. The bottom level of the hierarchy

consists of the alternatives. It is important to note that the decision model was developed with the involvement of experts who are knowledgeable on the decision topic.



Figure 1 Hierarchical Decision Model for Daycare Center Selection

Model Evaluation

The experts were provided the following information and were encouraged to ask for clarification if needed: (1) descriptions for each of the decision elements, (2) website addresses of the daycare centers identified as alternatives, and (3) a summary of observations from visits to the daycare centers conducted by the child's parents. With the final online model developed, a link with instructions was sent to the experts to collect their quantified judgments for each node. HDM uses pairwise comparisons where two elements are compared with each other at a time. The experts were given a total of 100 points to allocate between the two elements being compared, proportional to their relative importance to the goal. In the case of equal importance between the two elements, both get 50 points. As one element increases in importance, the points allocated to it also increases. For example, when comparing "cost" and "staff", if cost is twice as important as staff, cost gets about 67 points while staff gets 33 points. However, a score of zero

is not used in the pairwise comparisons, therefore in extreme cases, where one element is of negligible importance compared to the other element, the 100 points are split as 1 and 99 correspondingly. The experts were also asked to try to be consistent with their judgments. For example, if the expert weighs A more than B, and B more than C, then it logically follows that A weighs more than C.

The process is repeated until all possible pair of elements are exhausted. The process is then again repeated for each level of the hierarchy and ends when judgments are completed for all nodes. Figure 2 below shows what the experts see from the tool when comparing the different elements from level 2.



Figure 2 Main Criteria (Level 2) Pairwise Comparison tool

DATA AND DATA SOURCE(S)

Criteria and Sub-Criteria Selection

Identification of criteria and sub-criteria used in this model came from the combination of the author's personal experiences, literature reviews, and preliminary conversations with the experts. Five basic elements of daycare centers are identified as main criteria for the model namely facility, staff, cost, policy, and program. These criteria are then further broken down into sub-criteria resulting to a total of ten sub-criteria including facility's basic features, facility's other features, staff qualification, staff/child ratio, base cost, other costs, parenting philosophy, health policy, overall program reputation, and curriculum. The following descriptions below for each of the criteria and sub-criteria were given to the experts to provide some guidelines but in no way exhaustive.

Facility refers to the physical structure of the daycare center. Assessment of the **basic features** addresses the safety, sanitary, and security aspects of the facility. Some of the things to observe or ask are the following: Is it gated? How easy is it for outsiders to get inside? Are there security cameras, televisions, and fire alarms? Are emergency exits clearly marked? Are the different areas (play area, kitchen, restrooms, etc.) clearly separated, clean, and tidy? Are the toys and floor cleaned regularly? How big and open is the area? Can the staff easily see and monitor each child or are there any blind spots? Are sharp objects, medications, and chemicals stored away and out of reach of children? **Other features** include anything else that are unique that the center has to offer such as an outdoor play and exploration area.

Staff refers to all the personnel working on-site, and might include the center's director, administrative staff, cleaning staff, kitchen staff, and most importantly, the caregivers or teachers. High quality care occurs when caregivers provide meaningful interaction time with children and is best achieved through low child/staff ratio and investments in skilled caregivers (Pianta, Barnet, Burchinal, & Thornburg, 2009; Phillips, & Lowenstein, 2011). Staff qualification assessment includes years of experience in the field, any ongoing training and education in the areas of early childhood education, child development, and child health and safety. Any certifications such as first aid, cardiopulmonary resuscitation (CPR), and food handling. These formal forms of education capture the caregivers' professional competence and skill level, as well as career commitment (Phillips, & Lowenstein, 2011). Staff Ratio refers to the staff/child ratio and is specific to just the caregivers. The State of Oregon requires at the minimum one caregiver for every ten preschoolers ("Early Learning Division • Office of Child Care Child Care Regulations", 2017). However, a higher ratio allows the caregivers to respond to the individual needs of children thus, impacts the quality of care.

Cost refers to the amount of money charged by the daycare center for the services offered. Although available data suggests that there is positive but weak association between cost and quality (Levin & Schwartz, 2007; Marshall, et al., 2004), cost still needs to be considered as the family resources are limited. **Basic cost** is the fixed monthly cost charged by the daycare center, and is usually calculated as an average after taking the varying number of business days per month in consideration. **Other costs** are everything else that the parents have to pay that are not covered by the basic or fixed monthly cost. These may include any enrollment or application fees

at the beginning of school year, withdrawal fee, lunch fee, late pickup fee, late payment fee, and credit card processing fee.

Policy refers to some of the guiding principles of the overall operation of the establishment. **Parenting Philosophy** refers to the parenting style practiced at the daycare which includes guidance and discipline policy. What are the corrective actions taken when a child is not behaving appropriately? Are they more focused on a reward or punishment system? Do they encourage positive behavior? More importantly, does the staff practice positive behaviors and serve as good examples for the children? Are the rules enforced? Do they encourage independence and to be respectfulness of others? Do they build relationship with the children? **Health Policy** refers to the policies and procedures in keeping the children healthy. What types of food do they serve during breakfast, lunch, and snack times? Are they nutritious? Organic? Is it a nut-free facility? Do they require and periodically check immunization records of each child? What is their sick-child policy? Do they have smoking policy for employees?

Program refers to the overall program of the daycare center. How they plan to take care of the children. Daycare center's **curriculum** is usually posted on their website or brochure. It lays out what the children will be doing under their watch. This is their daily routine or schedule. Some things to consider are: is it structured and consistent? What types of activities? Are they developmentally appropriate? Do they have a good variety? Music, language, arts, for example? How does it help nurture the child's creativity? Is there quiet or nap time? How much playtime do they get? Are unannounced visits from parents allowed? **Reputation** comes from other

parents' personal experiences with the daycare center which can be found from online reviews, word of mouth, or personal interviews with parents whose children are currently attending or recently attended the particular daycare center being evaluated.

Alternatives Selection

Four daycare centers have been identified by the researcher to use as the alternatives. There are some prescreened criteria in choosing the alternatives and are based on the parents' inputs such as their past experiences, current situation, needs, convenience, and other wishes. For starters, it has to be a center-based child care. There are many benefits from choosing a licensed child care center as a result of state regulations including regular monitoring, participation in ongoing training, background check compliance with Office of Child Care, and on-site inspections to meet higher health, safety, and program standards ("Early Learning Division • Office of Child Care Child Care Regulations", 2017). Since the parents will be working, the center should also operate on a full time basis, where the hours of operation cover the regular work start and end times of the parents. Last but not the least, for time and convenience, the center should also be within a 2-mile radius from the child's place of residence or the parents' place of employment. As a supplement to the information provided by the daycare centers from their websites, the child's parents also conducted visits to the daycare centers and took notes of their personal observations and answers to their questions that are not found online.

Experts Selection

In this case study, a total of six experts were selected by the child's parents. The experts consist of the child's parents themselves, closest family members, and most trusted family friends whom are also parents of young children. Experts are knowledgeable of the child and family situation and are very familiar with the decision topic. One of the experts is also a certified caregiver and has previous work experience in a certified child care center environment.

ANALYSIS AND KEY FINDINGS

After all the experts have submitted their judgments using the online tool, the HDM tool provided data tables, by level, for the normalized decision weights from each expert. All HDM pairwise comparison data tables, along with the corresponding inconsistency scores, can be found in Appendix B1-6. In addition, the tool also provided a table summary of the final results from each expert, along with their inconsistency scores. The table can be found in Appendix B7. The final result scores are then averaged to arrive at the final collective scores and consequently the ranking of the alternatives. Inconsistency score is calculated for each expert and reflects the level of inconsistency that the expert exhibited while providing their judgments, which is common and is due to human nature (Saaty, 2003). For this case study, inconsistency score below ten percent is within the acceptable threshold. Disagreement score is also calculated by the HDM tool, and reflects the disagreement between the expert judgments with each other. Anything below ten percent is also acceptable in this case study. The algorithms used in calculating the inconsistency and disagreement scores are out of the scope of this project.

The analysis was done in multiple stages. The first stage of analysis is done by checking the individual expert judgment scores, in particular, looking for anomalies such as very high inconsistency scores or scores of equal weight distributed among the alternatives. From this exercise, one of the experts (EXPERT CT3) was identified to fit the description. Figure 3 shows EXPERT CT3's normalized decision weights from level 3. From the table, large inconsistency scores (beyond the acceptable threshold) are shown for the "Base Cost" and "Other Costs" sub-criteria. Even weights were also distributed for the "Other Features", "Parenting Philosophy",

and "Staff Ratio" sub-criteria. Digging deeper into the raw data that the expert provided, the inconsistencies were caused by using 1 and 99 scoring scheme for the mentioned sub-criteria. With five out of ten sub-criteria containing large inconsistent scores and even weights (0.25), EXPERT CT3's judgments were removed from the model.

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.12	0.25	0.38	0.25	0.55	0.75	0.25	0.21	0.84	0.28
Daycare Center V2	0.29	0.25	0.28	0.25	0.14	0.12	0.25	0.43	0.02	0.08
Daycare Center W3	0.35	0.25	0.09	0.25	0.10	0.01	0.25	0.07	0.02	0.37
Daycare Center K4	0.24	0.25	0.25	0.25	0.21	0.12	0.25	0.28	0.13	0.28
Inconsistency	0.01	0.00	0.01	0.00	0.34	0.17	0.00	0.05	0.05	0.00

Figure 3 EXPERT CT3's level 3 data

The second stage of analysis aggregates the results from all experts to arrive at the collective normalized decision weights, which is represented by calculating the corresponding average weights. This is necessary as the online HDM tool only provides this data to determine the local contribution of each alternative to the overall mission. The result from this exercise is the normalized local contribution of each main criterion to the overall mission. However, for the sub-criteria, the calculated local contribution is only towards their corresponding main criteria. An extra step which is to normalize the sub-criteria's local contributions is necessary to get each sub-criterion's contribution to the overall mission. With these information, the final quantified model was developed as shown in Appendix A.

The third stage is the ranking of the decision elements by hierarchical level. Starting from the lowest level (level 4), the alternatives were ranked as such: Daycare Center N1 (0.35), Daycare Center W3 (0.27), Daycare Center K4 (0.21), and Daycare Center V2 (0.17). For the next level up (level 3), the sub-criteria were ranked as such: Qualification (0.14), Reputation (0.12), Base Cost, Health Policy, and Curriculum tied at 0.11, Basic Features (0.10), Staff Ratio (0.09), Parenting Philosophy and Other Features tied at 0.08, and lastly, Other Costs at (0.05). And finally, the main criteria from level 2 were ranked as such: Staff (0.24), Program (0.23), Policy (0.19), Facility (0.18), and Cost (0.16).

The last stage is the interpretation of the results and key findings. Looking at the final contribution of each alternative, the best daycare center choice is clearly Daycare Center N1 with a 0.08-point difference from the second choice (Daycare Center W3). Interestingly enough, each expert data also resulted in the same order ranking of the four alternatives and the disagreement came only from the weight differences. The top three factors or sub-criteria contributing to the decision are staff qualification, program reputation, and tie on third place are base cost, health policy, and curriculum.

For preschoolers, which is the subject child in this case study, the key findings are consistent with other child care quality evaluations done, emphasizing parents' focus on curriculum and caregivers' level of education (Scopelliti, & Musatti, 2012). Both are known advantages of a regulated day care center compared to non-regulated ones. Staff qualification gives the parents assurance that the people they are entrusting their children with while they are at work are

professionally competent, skilled, and dedicated. In addition, it is expected to directly affect the whole process quality and consequently the child outcomes. A positive reputation of the overall program further increases that level of confidence on the staff. It also provides some validation of the quality child care that they are seeking for their children. Base cost and health policy are relative to the family's characteristics such as income, priorities, and health beliefs, and in this case are important factors. Curriculum contributes to the development of the child through structured, consistent, but varying activities, providing new experiences and opportunity for more learning and development.

Although the framework developed in this research paper is applicable to other families facing similar situation, the results and key findings are specific and personal to the family and child in the case study, guided by and reflective of their personal circumstances and preferences.

FUTURE RESEARCH

Three issues have been encountered and identified during the study and which were left for future study to address including (1) an additional sub-criterion for "staff turnover ratio" under the "staff" main criterion, (2) additional data collection through personal interviews of parents who has current or fairly recent experience with the daycare centers, and experts' visits to the daycare centers themselves, and lastly, (3) a sensitivity analysis of the model for robustness check.

Staff Turnover Ratio

During the development of the decision model, staff turnover ratio was identified as an important factor in a daycare center selection. Staff turnover has an effect on the quality of child care. Bond between children and staff contributes to the quality of care received by the children, which includes relationship building, attachment, consistency, and familiarity. This is even more important in this case since the results show that "Staff" is the top contributor to the mission, compared to the other main criteria on level 2 of the model. More stable caregivers are found to engage in more appropriate and attentive interactions with the children (Howes, 1992). A high staff turnover ratio hinders that and also serves as a red flag about the overall daycare environment including management. There are reasons for a high staff turnover which reflects how satisfied the staff is with their work situation. Unhappy staff is also associated with lower quality work. The problem encountered in this study is the collection of staff turnover ratio data from the daycare centers. It is not disclosed openly for obvious reasons if it will negatively affect the center, or perhaps is just not part of their performance metrics and therefore are not tracked.

As a result, this decision element was removed from the model and is saved for future research, when another way of obtaining the data is identified.

Additional data collection

From the findings, reputation is the second top indicator contributing to the decision in choosing a day care center. From the definition used in this research paper, which was also provided to the experts, reputation entails what other parents think about the overall daycare center program. This directly comes from the parents' personal experiences with the daycare center being evaluated. The experts used online reviews to gather some of the needed information. Summary of observations from the child's parents' personal visits to the daycare center were also provided to the experts. For future research, and if the experts have the bandwidth to do so, it is recommended that the experts conduct visits to the daycare centers as well, as to get their own overall impression and have the opportunity to be able to ask their own questions to the staff. In addition, identification of parents whose children are currently or recently enrolled in the daycare center under evaluation are encouraged to be able to conduct personal interviews.

Sensitivity Analysis (SA)

In HDM, the final decision obtained by the evaluation of the final ranking of the alternatives are subject to variations as the environment changes and therefore the solution is deemed not complete after determining the rank order of the alternatives (Chen, & Kocaoglu, 2008). It is recommended that a sensitivity analysis (SA) be conducted as it provides more useful information than just the final solution. SA is a fundamental concept used in quantitative decision model

(Evans, 1984) and some of the benefits includes identification of the critical elements of the decision (Armacost, & Hosseini, 1994; Triantaphyllou, & Sanchez, 1997) and robustness test of the final decision (Ho, 2004).

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APPENDIX A – FINAL, QUANTIFIED MODEL



APPENDIX B – AHP/HDM PCM DATA TABLES

1. EXPERT MC1

Level-1	Daycare Center Selection
Facility	0.24
Staff	0.31
Cost	0.19
Policy	0.15
Program	0.11
Inconsistency	0.00

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.55	0.00	0.00	0.00	0.00
Other Features	0.45	0.00	0.00	0.00	0.00
Qualification	0.00	0.65	0.00	0.00	0.00
Staff Ratio	0.00	0.35	0.00	0.00	0.00
Base Cost	0.00	0.00	0.75	0.00	0.00
Other Costs	0.00	0.00	0.25	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.40	0.00
Health Policy	0.00	0.00	0.00	0.60	0.00
Reputation	0.00	0.00	0.00	0.00	0.60
Curriculum	0.00	0.00	0.00	0.00	0.40
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.33	0.38	0.27	0.32	0.28	0.27	0.33	0.33	0.30	0.33
Daycare Center V2	0.21	0.15	0.18	0.21	0.22	0.33	0.18	0.18	0.20	0.18
Daycare Center W3	0.30	0.27	0.33	0.26	0.26	0.18	0.22	0.27	0.25	0.27
Daycare Center K4	0.17	0.20	0.22	0.21	0.24	0.22	0.27	0.22	0.25	0.22
Inconsistency	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Level-1	Daycare Center Selection
Daycare Center N1	0.31
Daycare Center V2	0.20
Daycare Center W3	0.27
Daycare Center K4	0.22
Inconsistency	0.00

2. EXPERT AS2

Level-1	Daycare Center Selection
Facility	0.16
Staff	0.22
Cost	0.22
Policy	0.21
Program	0.19
Inconsistency	0.02

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.70	0.00	0.00	0.00	0.00
Other Features	0.30	0.00	0.00	0.00	0.00
Qualification	0.00	0.75	0.00	0.00	0.00
Staff Ratio	0.00	0.25	0.00	0.00	0.00
Base Cost	0.00	0.00	0.60	0.00	0.00
Other Costs	0.00	0.00	0.40	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.70	0.00
Health Policy	0.00	0.00	0.00	0.30	0.00
Reputation	0.00	0.00	0.00	0.00	0.60
Curriculum	0.00	0.00	0.00	0.00	0.40
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.37	0.38	0.36	0.40	0.43	0.21	0.26	0.36	0.30	0.38
Daycare Center V2	0.10	0.09	0.11	0.18	0.12	0.18	0.15	0.22	0.21	0.10
Daycare Center W3	0.37	0.41	0.33	0.24	0.28	0.36	0.39	0.16	0.21	0.41
Daycare Center K4	0.16	0.12	0.21	0.18	0.17	0.25	0.20	0.26	0.27	0.11
Inconsistency	0.00	0.00	0.01	0.03	0.00	0.00	0.01	0.00	0.00	0.00

Level-1	Daycare Center Selection
Daycare Center N1	0.34
Daycare Center V2	0.14
Daycare Center W3	0.32
Daycare Center K4	0.20
Inconsistency	0.00

3. EXPERT CT3

Level-1	Daycare Center Selection
Facility	0.21
Staff	0.21
Cost	0.26
Policy	0.19
Program	0.12
Inconsistency	0.01

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.60	0.00	0.00	0.00	0.00
Other Features	0.40	0.00	0.00	0.00	0.00
Qualification	0.00	0.50	0.00	0.00	0.00
Staff Ratio	0.00	0.50	0.00	0.00	0.00
Base Cost	0.00	0.00	0.90	0.00	0.00
Other Costs	0.00	0.00	0.10	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.50	0.00
Health Policy	0.00	0.00	0.00	0.50	0.00
Reputation	0.00	0.00	0.00	0.00	0.40
Curriculum	0.00	0.00	0.00	0.00	0.60
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.12	0.25	0.38	0.25	0.55	0.75	0.25	0.21	0.84	0.28
Daycare Center V2	0.29	0.25	0.28	0.25	0.14	0.12	0.25	0.43	0.02	0.08
Daycare Center W3	0.35	0.25	0.09	0.25	0.10	0.01	0.25	0.07	0.02	0.37
Daycare Center K4	0.24	0.25	0.25	0.25	0.21	0.12	0.25	0.28	0.13	0.28
Inconsistency	0.01	0.00	0.01	0.00	0.34	0.17	0.00	0.05	0.05	0.00

Level-1	Daycare Center Selection
Daycare Center N1	0.36
Daycare Center V2	0.22
Daycare Center W3	0.18
Daycare Center K4	0.23
Inconsistency	0.04

4. EXPERT AC4

Level-1	Daycare Center Selection
Facility	0.13
Staff	0.20
Cost	0.09
Policy	0.34
Program	0.24
Inconsistency	0.00

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.50	0.00	0.00	0.00	0.00
Other Features	0.50	0.00	0.00	0.00	0.00
Qualification	0.00	0.35	0.00	0.00	0.00
Staff Ratio	0.00	0.65	0.00	0.00	0.00
Base Cost	0.00	0.00	0.71	0.00	0.00
Other Costs	0.00	0.00	0.29	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.33	0.00
Health Policy	0.00	0.00	0.00	0.67	0.00
Reputation	0.00	0.00	0.00	0.00	0.35
Curriculum	0.00	0.00	0.00	0.00	0.65
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.35	0.43	0.27	0.34	0.31	0.27	0.31	0.36	0.39	0.37
Daycare Center V2	0.23	0.11	0.14	0.19	0.20	0.37	0.17	0.15	0.14	0.16
Daycare Center W3	0.29	0.25	0.36	0.28	0.27	0.13	0.22	0.27	0.25	0.28
Daycare Center K4	0.13	0.21	0.23	0.19	0.22	0.24	0.30	0.21	0.23	0.18
Inconsistency	0.01	0.02	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.01

Level-1	Daycare Center Selection
Daycare Center N1	0.35
Daycare Center V2	0.17
Daycare Center W3	0.27
Daycare Center K4	0.21
Inconsistency	0.01

5. EXPERT PM5

Level-1	Daycare Center Selection
Facility	0.17
Staff	0.20
Cost	0.12
Policy	0.09
Program	0.43
Inconsistency	0.00

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.50	0.00	0.00	0.00	0.00
Other Features	0.50	0.00	0.00	0.00	0.00
Qualification	0.00	0.77	0.00	0.00	0.00
Staff Ratio	0.00	0.23	0.00	0.00	0.00
Base Cost	0.00	0.00	0.73	0.00	0.00
Other Costs	0.00	0.00	0.27	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.32	0.00
Health Policy	0.00	0.00	0.00	0.68	0.00
Reputation	0.00	0.00	0.00	0.00	0.34
Curriculum	0.00	0.00	0.00	0.00	0.66
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.46	0.47	0.29	0.40	0.37	0.26	0.45	0.35	0.31	0.48
Daycare Center V2	0.16	0.11	0.14	0.19	0.18	0.40	0.13	0.18	0.20	0.11
Daycare Center W3	0.24	0.21	0.29	0.31	0.26	0.14	0.17	0.27	0.24	0.24
Daycare Center K4	0.15	0.21	0.28	0.10	0.18	0.20	0.25	0.20	0.25	0.17
Inconsistency	0.02	0.03	0.03	0.05	0.01	0.04	0.00	0.01	0.00	0.01

Level-1	Daycare Center Selection
Daycare Center N1	0.39
Daycare Center V2	0.16
Daycare Center W3	0.25
Daycare Center K4	0.20
Inconsistency	0.01

6. EXPERT TC6

Level-1	Daycare Center Selection
Facility	0.20
Staff	0.25
Cost	0.20
Policy	0.18
Program	0.17
Inconsistency	0.02

Level-2	Facility	Staff	Cost	Policy	Program
Basic Features	0.60	0.00	0.00	0.00	0.00
Other Features	0.40	0.00	0.00	0.00	0.00
Qualification	0.00	0.50	0.00	0.00	0.00
Staff Ratio	0.00	0.50	0.00	0.00	0.00
Base Cost	0.00	0.00	0.60	0.00	0.00
Other Costs	0.00	0.00	0.40	0.00	0.00
Parenting Philosophy	0.00	0.00	0.00	0.40	0.00
Health Policy	0.00	0.00	0.00	0.60	0.00
Reputation	0.00	0.00	0.00	0.00	0.75
Curriculum	0.00	0.00	0.00	0.00	0.25
Inconsistency	0.00	0.00	0.00	0.00	0.00

Level-3	Basic Features	Other Features	Qualification	Staff Ratio	Base Cost	Other Costs	Parenting Philosophy	Health Policy	Reputation	Curriculum
Daycare Center N1	0.39	0.38	0.25	0.34	0.29	0.34	0.32	0.36	0.38	0.36
Daycare Center V2	0.15	0.12	0.17	0.14	0.34	0.24	0.16	0.17	0.16	0.18
Daycare Center W3	0.29	0.19	0.39	0.22	0.23	0.15	0.22	0.27	0.23	0.24
Daycare Center K4	0.16	0.32	0.20	0.30	0.14	0.27	0.30	0.20	0.24	0.22
Inconsistency	0.01	0.03	0.01	0.01	0.05	0.00	0.00	0.00	0.00	0.00

Level-1	Daycare Center Selection		
Daycare Center N1	0.34		
Daycare Center V2	0.18		
Daycare Center W3	0.25		
Daycare Center K4	0.23		
Inconsistency	0.01		

7. Overall result from five experts

Daycare Center Selection	Daycare Center N1	Daycare Center V2	Daycare Center W3	Daycare Center K4	Inconsistency
EXPERT AC4	0.35	0.17	0.27	0.21	0.01
EXPERT AS2	0.34	0.14	0.32	0.2	0
EXPERT MC1	0.31	0.2	0.27	0.22	0
EXPERT PM5	0.39	0.16	0.25	0.2	0.01
EXPERT TC6	0.34	0.18	0.25	0.23	0.01
Mean	0.35	0.17	0.27	0.21	
Minimum	0.31	0.14	0.25	0.2	
Maximum	0.39	0.2	0.32	0.23	
Std. Deviation	0.03	0.02	0.03	0.01	
Disagreement					0.019