

Paper 34 ISAHP 2016

Comparative AHP and FAHP

by The Jin Ai

Submission date: 22-May-2019 09:48AM (UTC+0700)

Submission ID: 1134178201

File name: Paper_34_ISAHP_2016_Comparative_AHP_and_FAHP.pdf (3.92M)

Word count: 960

Character count: 4825



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DOI: <https://doi.org/10.13033/isahp.y2016.131>

London, UK

August 4 - August 7, 2016



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A CLOUD MIGRATION DECISION SUPPORT SYSTEM FOR SMES IN TAMIL NADU (INDIA) USING AHP

Berlin Mano Robert Wilson, Sheffield Hallam University; Babak Khazaei,
Sheffield Hallam University; Laurence Hirsch, Sheffield Hallam University

DOI: <https://doi.org/10.13033/isahp.y2016.001>

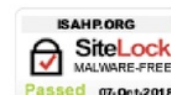
A COMPARISON STUDY OF ABC INVENTORY CLASSIFICATION USING MCDM METHODS

ERGUN ERASLAN, YILDIRIM BEYAZIT UNIVERSITY; Yusuf Tansel Ic, Baskent
University

DOI: <https://doi.org/10.13033/isahp.y2016.002>

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Giuseppe Bruno, University of Naples "Federico II"; Francesco Ciardiello,
University of Sheffield; Emilio Esposito, University of Naples "Federico II"; Andrea



Genovese, University of Sheffield; Carmela Piccolo, University of Naples
"Federico II"

DOI: <https://doi.org/10.13033/isahp.y2016.003>

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Gozde Kadioglu, Student- Istanbul Technical University; Umut Arican, Student;
Cemil Ceylan, Assist. Prof.; Cigdem Kadaifci, Istanbul Teknik Universitesi, Turkey

DOI: <https://doi.org/10.13033/isahp.y2016.004>

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Berk Kucukaltan, Trakya University, Edirne/Turkey; Ilker Topcu, Istanbul Teknik
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DOI: <https://doi.org/10.13033/isahp.y2016.005>

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Mujgan Sagir Ozdemir, ESOGU, Turkey

DOI: <https://doi.org/10.13033/isahp.y2016.006>

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Indrani Basak, Penn State Altoona

DOI: <https://doi.org/10.13033/isahp.y2016.007>

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Vitaliy V. Tsyganok, Institute for Information Recording of National Academy of
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DOI: <https://doi.org/10.13033/isahp.y2016.008>

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Betül Cansu ÖZÇAKMAK, THE SCIENTIFIC AND TECHNOLOGICAL RESEARCH
COUNCIL OF TURKEY; Metin Dağdeviren, Department of Industrial Engineering,
Gazi University, Ankara, Turkey

DOI: <https://doi.org/10.13033/isahp.y2016.009>

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Kumru Didem Atalay, Baskent University; Gülin Feryal Can, Baskent University;
Betül Cansu Özçakmak, TÜBİTAK

DOI: <https://doi.org/10.13033/isahp.y2016.010>

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Robin Rivest, HEC Montreal

DOI: <https://doi.org/10.13033/isahp.y2016.011>

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Mustafa Yurdakul, Gazi University; Yusuf Tansel Iç, Baskent University

DOI: <https://doi.org/10.13033/isahp.y2016.012>

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Grzegorz Ginda, AGH University of Science and Technology, Poland; Miroslaw
Dytczak, AGH University of Science and Technology, Poland

DOI: <https://doi.org/10.13033/isahp.y2016.013>

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Luis Antonio Bojórquez-Tapia, LANCIS UNAM, Mexico; Paola Antonio Gómez-
Priego, Laboratorio Nacional de Ciencias de la Sostenibilidad; Lakshmi Antonio
Charli-Joseph, Laboratorio Nacional de Ciencias de la Sostenibilidad

DOI: <https://doi.org/10.13033/isahp.y2016.014>

AHP AND DECISION MAKING ON THE USE OF CULTURAL HERITAGE IN RURAL TOURISM DEVELOPMENT IN LATVIA

Baiba Rivza, Latvia University of Agriculture

DOI: <https://doi.org/10.13033/isahp.y2016.015>

AHP FOR STUDENT DECISIONS IN A MONTESSORI ELEMENTARY CLASS

William Adams, Decision Lens Inc

DOI: <https://doi.org/10.13033/isahp.y2016.016>

AHP GROUP DECISION MAKING AND CLUSTERING

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DOI: <https://doi.org/10.13033/isahp.y2016.017>

AHP IN EHEALTH: THE MISSING PUZZLE BETWEEN (USERS') NEEDS ELICIATION, REQUIREMENTS DESIGN AND SPECIFICATION WRITING.

Giuseppe Fico, Universidad Politécnica de Madrid; Maria Teresa Arredondo, Universidad Politécnica de Madrid

DOI: <https://doi.org/10.13033/isahp.y2016.018>

AHP METHOD OF DETERMINATION OF RELATIVE WEIGHTS FOR JUDGED ITEMS AND JUDGES IN A JUDGEMENT PROCESS

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DOI: <https://doi.org/10.13033/isahp.y2016.019>

AHP MODEL FOR SELECTING PACKAGING SYSTEMS IN FOOD INDUSTRY

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DOI: <https://doi.org/10.13033/isahp.y2016.020>

AN AHP APPLICATION TO WINE EVALUATION: RATING BASED ON THE CRITERIA FRAMEWORK OF THE METHOD ADOPTED BY BRAZILIAN SOMELIERS ASSOCIATION - ABS

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DOI: <https://doi.org/10.13033/isahp.y2016.021>

AN APPLICATION OF AHP IN CLIMATE CHANGE MITIGATION WITH ACQUIRING RENEWABLE ENERGY TECHNOLOGIES IN NEPAL

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DOI: <https://doi.org/10.13033/isahp.y2016.022>

AN ASSESSMENT MODEL FOR ENTERPRISE ARCHITECTURE IMPLEMENTATION IN PUBLIC SECTOR ORGANISATION

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DOI: <https://doi.org/10.13033/isahp.y2016.023>

AN EMPIRICAL INVESTIGATION ON HOW ANALYTIC NETWORK PROCESS GROUP DECISION MAKING INFLUENCES PROJECT RISK MANAGEMENT

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DOI: <https://doi.org/10.13033/isahp.y2016.024>

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DOI: <https://doi.org/10.13033/isahp.y2016.025>

AN INTEGRATED AHP AND WEIGHTED FUZZY GOAL PROGRAMMING MODEL FOR IS PROJECT SELECTION

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Tiemcen university

DOI: <https://doi.org/10.13033/isahp.y2016.026>

AN INTEGRATED MULTI-CRITERIA PLANNING MODEL FOR THE HYDROPOWER SURPLUS UTILIZATION IN PARAGUAY

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Aldo Martínez, Polytechnic Faculty, National University of Asuncion*

DOI: <https://doi.org/10.13033/isahp.y2016.027>

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DOI: <https://doi.org/10.13033/isahp.y2016.028>

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Jozsef Temesi, Corvinus University of Budapest, Hungary

DOI: <https://doi.org/10.13033/isahp.y2016.029>

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János Fülöp, MTA SZTAKI, Hungarian Academy of Sciences

DOI: <https://doi.org/10.13033/isahp.y2016.030>

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Takafumi Mizuno, Meijo University, Japan; Kouichi Taji, Nagoya University

DOI: <https://doi.org/10.13033/isahp.y2016.031>

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Fauzan Azima, Universitas Indonesia; Ratih Dyah Kusumastuti, Universitas Indonesia

DOI: <https://doi.org/10.13033/isahp.y2016.032>

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South Korea; Min-Suk Yoon, Chonnam National University, Republic of Korea*

DOI: <https://doi.org/10.13033/isahp.y2016.033>

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Mohammed Alkahily, Independent Finance Consultant*

DOI: <https://doi.org/10.13033/isahp.y2016.034>

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INITIATIVES**

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DOI: <https://doi.org/10.13033/isahp.y2016.035>

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DOI: <https://doi.org/10.13033/isahp.y2016.036>

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Ali Lakhani, Griffith University; Heidi Zeeman, Griffith University

DOI: <https://doi.org/10.13033/isahp.y2016.037>

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DOI: <https://doi.org/10.13033/isahp.y2016.038>

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Ramesh Vahidi, Business School, Southampton University

DOI: <https://doi.org/10.13033/isahp.y2016.039>

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DOI: <https://doi.org/10.13033/isahp.y2016.040>

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DOI: <https://doi.org/10.13033/isahp.y2016.041>

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Gesù Children's Hospital; Francesco Cosimo Faggiano, Bambino Gesù Children's
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DOI: <https://doi.org/10.13033/isahp.y2016.042>

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Salomon, Sao Paulo State University, Brazil; Fernando Augusto Silva Marins,
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DOI: <https://doi.org/10.13033/isahp.y2016.043>

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MIRAN, Ege University; AYCA NUR SAHİN, EGE UNIVERSITY; FARUK EMEKSİZ,*

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DOI: <https://doi.org/10.13033/isahp.y2016.044>

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DOI: <https://doi.org/10.13033/isahp.y2016.045>

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Dee Wood Kivett, Clemson University

DOI: <https://doi.org/10.13033/isahp.y2016.046>

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Henk Broekhuizen, University of Twente; Karin Groothuis-Oudshoorn, University of Twente; Marjan Hummel, University of Twente, Dept. HTSR

DOI: <https://doi.org/10.13033/isahp.y2016.047>

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DOI: <https://doi.org/10.13033/isahp.y2016.048>

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Claudio Garuti, Fulcrum Ingenieria, Chile

DOI: <https://doi.org/10.13033/isahp.y2016.049>

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Claudio Javier Macuada, Universidad de Santiago de Chile; Francisca Jimena Fábrega, Universidad de La Serena; Astrid Maria Oddershede, USACH, Chile

DOI: <https://doi.org/10.13033/isahp.y2016.050>

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DOI: <https://doi.org/10.13033/isahp.y2016.051>

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DOI: <https://doi.org/10.13033/isahp.y2016.052>

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Irene Monsonís-Payá, Polibienestar Research Institute, Universitat de Valencia; Monica Garcia-Melon, Universitat Politecnica de Valencia, Spain; Félix Lozano-Aguilar, Universitat Politecnica de Valencia

DOI: <https://doi.org/10.13033/isahp.y2016.053>

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DOI: <https://doi.org/10.13033/isahp.y2016.054>

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Martina Andellini, Bambino Gesù Children's Hospital; Giorgia Tedesco, Bambino Gesù Children's Hospital; Francesco Cosimo Faggiano, Bambino Gesù Children's

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DOI: <https://doi.org/10.13033/isahp.y2016.055>

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DOI: <https://doi.org/10.13033/isahp.y2016.056>

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Antonella Petrillo, University of Naples "Parthenope", Italy; Fabio De Felice, University of Cassino and Southern Lazio, Italy; Federico Zomparelli, University of Cassino and Southern Lazio

DOI: <https://doi.org/10.13033/isahp.y2016.057>

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DOI: <https://doi.org/10.13033/isahp.y2016.058>

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DOI: <https://doi.org/10.13033/isahp.y2016.059>

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Chiara D'Alpaos, DICEA - University of Padova, Italy; Rubina Canesi, DICEA, University of Padova, Italy; Fabio De Felice, University of Cassino and Southern Lazio, Italy; Antonella Petrillo, University of Naples "Parthenope", Italy

DOI: <https://doi.org/10.13033/isahp.y2016.060>

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DOI: <https://doi.org/10.13033/isahp.y2016.061>

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DOI: <https://doi.org/10.13033/isahp.y2016.062>

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Valentina Ferretti, London School of Economics and Political Science; Giulio Mondini, SIT

DOI: <https://doi.org/10.13033/isahp.y2016.063>

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Hannia Karime González-Urango, Universitat Politècnica de Valencia; Monica Garcia-Melon, Universitat Politècnica de Valencia, Spain

DOI: <https://doi.org/10.13033/isahp.y2016.064>

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Sulaimon Olanrewaju Adebisi, Business Administration Department, Fountain University, Osogbo, Nigeria; Emmanuel Olateju Oyatoye, University of Lagos, Nigeria; Bilqis Bolanle Amole, Department of Business Administration, University of Lagos, Nigeria

DOI: <https://doi.org/10.13033/isahp.y2016.065>

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Miguel Angel Ortiz Barrios, Universidad de la Costa, Colombia; Antonella Petrillo, University of Naples "Parthenope", Italy; Fabio De Felice, University of

Cassino and Southern Lazio, Italy; Javier José Rua Muñoz, Department of Industrial Engineering, Universidad de la Costa CUC; Zulmeira Herrera Fontalvo, Department of Industrial Engineering, Universidad de la Costa CUC; Saimon de Jesús Ortega Gutiérrez, Department of Industrial Engineering, Universidad de la Costa CUC

DOI: <https://doi.org/10.13033/isahp.y2016.066>

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DOI: <https://doi.org/10.13033/isahp.y2016.067>

EVALUATION OF CUSTOMER RELATIONSHIP MANAGEMENT (CRM) SYSTEMS USING AN AHP APPROACH

Shannon Agredo, Carlow University; Catherine Vella, Carlow University; Enrique Mu, Carlow University, U.S.

DOI: <https://doi.org/10.13033/isahp.y2016.068>

EVALUATION OF THE QUALITY OF LIFE IN THE CZECH ADMINISTRATIVE REGIONS

Josef Jablonsky, University of Economics, Czech Republic

DOI: <https://doi.org/10.13033/isahp.y2016.069>

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Josef Arlt, University of Economics Prague; Martin Mandel, University of Economics Prague; Markéta Arltová, University of Economics Prague

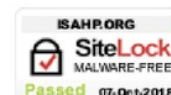
DOI: <https://doi.org/10.13033/isahp.y2016.070>

FACTORS AND THEIR INFLUENCE IN DEVELOPING FOOD COOPERATIVES

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DOI: <https://doi.org/10.13033/isahp.y2016.071>

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Omid Hosseinzadeh, Assistant Professor; Farideh Delavari, PhD; Reza Abdi,
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DOI: <https://doi.org/10.13033/isahp.y2016.072>

HOW TO WRITE A CONTRACT WITH THE AHP

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Tel Aviv University, Israel

DOI: <https://doi.org/10.13033/isahp.y2016.073>

IDENTIFYING R&D SUCCESS PARTNERSHIP FOR NEPALESE UNIVERSITIES USING ANALYTIC HIERARCHY PROCESS

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Sapkota, Kathmandu University, Dhulikhel, Kavre, Nepal

DOI: <https://doi.org/10.13033/isahp.y2016.074>

IMPROVEMENT OF OBJECT ORIENTED DESIGN QUALITY MEASUREMENT USING FUZZY AHP

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DOI: <https://doi.org/10.13033/isahp.y2016.075>

INTEGRATING AHP INTO EUNETHTA CORE MODEL: THE DECISION-ORIENTED HEALTH TECHNOLOGY ASSESSMENT (DOHTA) METHOD

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Faggiano, Bambino Gesù Children's Hospital; Giorgia Tedesco, Bambino Gesù
Children's Hospital; Martina Andellini, Bambino Gesù Children's Hospital; Pietro
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DOI: <https://doi.org/10.13033/isahp.y2016.076>

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DOI: <https://doi.org/10.13033/isahp.y2016.077>

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DOI: <https://doi.org/10.13033/isahp.y2016.078>

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DOI: <https://doi.org/10.13033/isahp.y2016.080>

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DOI: <https://doi.org/10.13033/isahp.y2016.081>

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DOI: <https://doi.org/10.13033/isahp.y2016.088>

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DOI: <https://doi.org/10.13033/isahp.y2016.089>

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*Paolo Melillo, Second University of Naples; Leandro Pecchia, University of
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DOI: <https://doi.org/10.13033/isahp.y2016.130>

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10
COMPARATIVE ANALYSIS OF AHP AND FUZZY AHP IN SUPPLIER SELECTION PROBLEM

2
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ABSTRACT

Appropriate supplier can lead the company to reach its competitive advantage. Many 4 researchers have been conducting research in supplier selection problem using various multi-criteria decision making methods, including the Analytical Hierarchy Process (AHP) and its variation, such as Fuzzy AHP (FAHP). The research in this paper is trying to apply both AHP and FAHP in a glove manufacturer in order to see the role of the expert to the result of both methods. Four experts who are the staff in that company that have been working for 12-16 years are involved to see if FAHP is still needed. The FAHP method in this paper is based on the FAHP model developed by Chang (1996).

Keywords: supplier selection problem, priority, AHP, Fuzzy AHP

1. Introduction

To achieve 2 the competitive advantage a good supplier that are able to deliver the raw material in the right quantity, at the right time and at the right 3 quality is needed. The research in this paper was conducted in a glove manufacturer. Supplier selection problem is considered as multi criteria decision-making problem. One of the famous methods that has been used is AHP including its variation such as FAHP. However, the used of FAHP require more complex computation rather than the use of AHP.

2. Literature Review

Numerous researches have 9 been conducted dealing with supplier selection process. Sometimes the company has to consider both quantitative and qualitative criteria. In that case, AHP method developed by Saaty (1980) is a powerful tool. There exist a criterion we found in our study 6 that has not discussed yet in the previous work which is percentage of quality reduction. Kabir and Hasin (2011) conducted comparative analysis between AHP and FAHP, however the role of the expert to the result of AHP and FAHP which will be the focus of the research in this paper, was not discussed yet in the previous work.

3. Hypotheses/Objectives

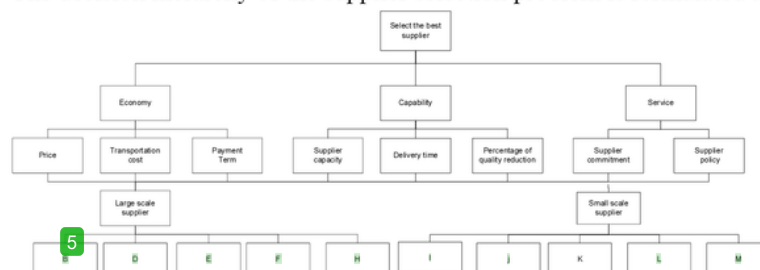
The research in this paper is trying to observe the role of the expert to the result of AHP and FAHP. The hypothesis is that if the expert is someone who has excellent knowledge and expertise related to the problem he/she is facing, then AHP alone is more than enough to be used as a tools for decision making.

1 4. Research Design/Methodology

The model we developed based on the pool of experts and secondary sources. Secondary sources was used to confirm the criteria that the company used for supplier selection with what other companies had been done. Four experts were involved in this study. They have been working for a this company for 12-16 years. Geometric mean is used to aggregate the opinion from those experts. To reduce the inconsistency when structuring the problem we are trying to build the structure in such a way that in each level at most 5 elements will be pair-wise compared.

5. Data/Model Analysis

The decision hierarchy of the supplier selection problem is formulated as follow:



Finally, the priority rank of supplier resulted from both methods are as follows:

AHP : D,B,H,I,J,K,M,L,F,E, FAHP : D,B,H,I,K,J,M,L,E,F

6. Limitations

7
 The FAHP method used in this study is based on the extent analysis method provided by Chang (1996) which has been criticized by Wang (2008). Therefore in order to strengthen the result from this paper, further analysis will be conducted by applying other FAHP method such as Wang (2008) and fuzzy logarithmic least squares method (LLSM).

7. Conclusions

The contribution of the research in this paper are 1)based on the study we can conclude that if the expert is someone who has excellent knowledge about the problem i.e. some who has been working in the company for more than 12 years, then the result from AHP

and FAHP do not have any differences; 2) in the of supplier selection model we found once criteria that has been discussed yet in the literature review which is percentage of quality reduction.

8. Key References

Saaty, T. L. (1980). *The Analytic hierarchy process*. New York, NY: McGraw-Hill

Chang, D. Y. (1996). Applications of the extent analysis method on fuzzy AHP. *European journal of operational research*, 95(3), 649-655.

Wang, Y. M., Luo, Y., & Hua, Z. (2008). On the extent analysis method for fuzzy AHP and its applications. *European Journal of Operational Research*, 186(2), 735-747.

Kabir, G., & Hasin, M. A. A. (2011). Comparative analysis of AHP and Fuzzy AHP models for multicriteria inventory classification. *International Journal of Fuzzy Logic Systems*, 1(1), 1-16.

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