

## Prof. Banu SOYLU

### Personal Information

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### Education Information

Doctorate, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Turkey 2002 - 2007

Post Graduate, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Turkey 1999 - 2002

Under Graduate, Erciyes Üniversitesi, Mühendislik Fakültesi, Endüstri Mühendisliği, Turkey 1994 - 1998

### Dissertations

Doctorate, An Evolutionary Algorithm for Multiple Criteria Problems, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Endüstri Mühendisliği, 2007

Post Graduate, A Mixed Model Flow Line Sequencing Problem with Makespan Minimization, Orta Doğu Teknik Üniversitesi, Endüstri Mühendisliği, Endüstri Mühendisliği, 2002

### Research Areas

Technical Sciences, Industrial Engineering , Stochastic Modeling, Stochastic Processes, Optimization Theory and Methods, Multiobjective Optimization, Linear Programming, Integer and Mixed Integer Programming, Decision Theory, Supply Chain and Logistics Management

### Academic Titles / Tasks

Professor, Erciyes Üniversitesi, Mühendislik Fakültesi, Endüstri Mühendisliği, 2017 - Continues

Associate Professor, Erciyes Üniversitesi, Mühendislik Fakültesi, Endüstri Mühendisliği, 2012 - 2017

Assistant Professor, Clemson University, Mathematical Sciences, 2011 - 2012

Assistant Professor, Erciyes Üniversitesi, Mühendislik Fakültesi, Endüstri Mühendisliği, 2007 - 2012

Research Assistant, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Endüstri Mühendisliği, 1999 - 2007

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A multiobjective post-sales guarantee and repair services network design problem**  
Yıldız G. B. , SOYLU B.  
International Journal of Production Economics, vol.216, pp.305-320, 2019 (Journal Indexed in SCI)
- II. **A multiobjective hub-airport location problem for an airline network design**  
SOYLU B., Katip H.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.277, no.2, pp.412-425, 2019 (Journal Indexed in SCI)
- III. **The search-and-remove algorithm for biobjective mixed-integer linear programming problems**  
SOYLU B.

- EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.268, no.1, pp.281-299, 2018 (Journal Indexed in SCI)
- IV. **An algorithm for approximating the Pareto set of the multiobjective set covering problem**  
Weerasena L., Wiecek M. M. , SOYLU B.  
ANNALS OF OPERATIONS RESEARCH, vol.248, pp.493-514, 2017 (Journal Indexed in SCI)
- V. **Fathoming rules for biobjective mixed integer linear programs: Review and extensions**  
BELOTTI P., SOYLU B., Wiecek M. M.  
DISCRETE OPTIMIZATION, vol.22, pp.341-363, 2016 (Journal Indexed in SCI)
- VI. **An exact algorithm for biobjective mixed integer linear programming problems**  
SOYLU B., Yildiz G. B.  
COMPUTERS & OPERATIONS RESEARCH, vol.72, pp.204-213, 2016 (Journal Indexed in SCI)
- VII. **A general variable neighborhood search heuristic for multiple traveling salesmen problem**  
SOYLU B.  
COMPUTERS & INDUSTRIAL ENGINEERING, vol.90, pp.390-401, 2015 (Journal Indexed in SCI)
- VIII. **Heuristic approaches for biobjective mixed 0-1 integer linear programming problems**  
Soylu B.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.245, no.3, pp.690-703, 2015 (Journal Indexed in SCI)
- IX. **Multi-criteria inventory classification with reference items**  
SOYLU B., Akyol B.  
COMPUTERS & INDUSTRIAL ENGINEERING, vol.69, pp.12-20, 2014 (Journal Indexed in SCI)
- X. **A preference ordered classification for a multi-objective max-min redundancy allocation problem**  
SOYLU B., Ulusoy S. K.  
COMPUTERS & OPERATIONS RESEARCH, vol.38, no.12, pp.1855-1866, 2011 (Journal Indexed in SCI)
- XI. **A multi-criteria sorting procedure with Tchebycheff utility function**  
Soylu B.  
COMPUTERS & OPERATIONS RESEARCH, vol.38, no.8, pp.1091-1102, 2011 (Journal Indexed in SCI)
- XII. **Bicriteria p-Hub Location Problems and Evolutionary Algorithms**  
Köksalan M., SOYLU B.  
INFORMS JOURNAL ON COMPUTING, vol.22, no.4, pp.528-542, 2010 (Journal Indexed in SCI)
- XIII. **INTEGRATING PROMETHEEII WITH THE TCHEBYCHEFF FUNCTION FOR MULTI CRITERIA DECISION MAKING**  
Soylu B.  
INTERNATIONAL JOURNAL OF INFORMATION TECHNOLOGY & DECISION MAKING, vol.9, no.4, pp.525-545, 2010 (Journal Indexed in SCI)
- XIV. **A Favorable Weight-Based Evolutionary Algorithm for Multiple Criteria Problems**  
SOYLU B., Köksalan M.  
IEEE TRANSACTIONS ON EVOLUTIONARY COMPUTATION, vol.14, no.2, pp.191-205, 2010 (Journal Indexed in SCI)
- XV. **Flow shop-sequencing problem with synchronous transfers and makespan minimization**  
Soylu B., Kirca Ö., Azizoğlu M.  
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.45, no.15, pp.3311-3331, 2007 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **Multi-criteria Warehouse Space Allocation Problem and an Application**  
SOYLU B.  
JOURNAL OF POLYTECHNIC-POLITEKNIK DERGISI, vol.20, no.3, pp.613-621, 2017 (Journal Indexed in ESCI)
- II. **A branch-and-bound algorithm for biobjective mixed-integer programs**  
BELOTTI P., SOYLU B., WIECEK M.  
Optimization Online, 2013 (Non-Refreed Journal)
- III. **Tedarikçinin Süreçlerini İyileştirme Amaçlı Tedarikçi Seçim Problemi**

GÖKALP B., SOYLU B.

Endüstri Mühendisliği Dergisi, vol.2011, pp.4-15, 2011 (Other Refereed National Journals)

IV. **Öğretim Üyelerinin İş Yükü Seviyelerinin Bir Analitik Ağ Modeli ile Değerlendirilmesi: Mühendislik Fakültesinde Bir Uygulama**

BULUT K., SOYLU B.

Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.25, pp.150-167, 2009 (Other Refereed National Journals)

## Books & Book Chapters

I. **Risk Değerlendirme Uygulama Alanları**

SOYLU B.

in: Risk Değerlendirmesi, M. Zeydan, Editor, Atatürk Üniversitesi Açık Öğretim Fakültesi Yayınları, Erzurum, pp.1-16, 2015

II. **Risk Değerlendirme Uygulama Alanları**

SOYLU B.

in: Risk Değerlendirmesi, M. Zeydan, Editor, Atatürk Üniversitesi Açık Öğretim Fakültesi Yayınları, pp.7-16, 2015

III. **An Evolutionary Algorithm for the Multi-objective Multiple Knapsack Problem**

SOYLU B., KÖKSALAN M. M.

in: Cutting-Edge Research Topics on Multiple Criteria Decision Making,, Yong Shi, Shouyang Wang, Yi Peng, Jianping Li, Yong Zeng, Editor, Springer-Verlag, Berlin-Heidelberg, pp.1-8, 2009

## Refereed Congress / Symposium Publications in Proceedings

I. **A special case of the p-hub center network problem**

ENGÜR E., SOYLU B.

International Conference on Data Science, Machine Learning and Statistics (DMS-2019), 26 - 29 June 2019

II. **Shifting from job-shop to cellular manufacturing in a factory with high production flexibility: A simulation model**

SOYLU B., KILINÇ K.

European Conference on Science, Art Culture ECSAC2018, Antalya, Turkey, 19 - 22 April 2018

III. **A new formulation for the uncapacitated p-hub center problem**

SOYLU B., ENGÜR E.

European Conference on Science, Art Culture ECSAC2018, Antalya, Turkey, 19 - 22 April 2018

IV. **Stochastic Modeling of a Refrigerated Food Logistics Chain in order to Optimize Food Quality**

SOYLU B.

International Advanced Researches and Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017

V. **Improving Logistics Operations in a Cold Supply Chain: An Experimental Analysis**

SOYLU B., BEKTAŞ H. S. , KAYTANCI K., ERBAŞ A.

International Advanced Researches and Engineering Congress-2017, Osmaniye, Turkey, 16 - 18 November 2017

VI. **A Biobjective p-hub center problem**

SOYLU B., ENGÜR E.

2nd International Mediterranean Science and Engineering Congress (IMSEC2017), Adana, Turkey, 25 - 27 October 2017

VII. **A Biobjective Reverse Logistics Network Design Problem: Solution Methods and an Application**

YILDIZ G. B. , SOYLU B.

2nd International Mediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017

VIII. **A biobjective p-hub median problem: properties and algorithms for the Pareto frontier**

SOYLU B., KATİP H.

2nd InternationalMediterranean Science and Engineering Congress (IMSEC 2017), Adana, Turkey, 25 - 27 October 2017

- IX. **Determination and Modelling of the Aflatoxin Production of Aflatoxigenic *Aspergillus parasiticus* in Red Pepper Stored Under Different Water Activities (aw) and Temperature**  
KESMEN Z., YAPAR N., SOYLU B.  
2nd International Mediterranean Science and Engineering Congress (IMSEC2017), Adana, Turkey, 25 - 27 October 2017
- X. **YÜKSEK ÜRETİM ESNEKLİĞİNE SAHİP BİR İŞLETMEDE HÜCRESEL ÜRETİM SİSTEMİ TASARIMI**  
KILINÇ K., SOYLU B.  
37. YÖNEYLEM ARAŞTIRMASI VE ENDÜSTRİ MÜHENDİSLİĞİ ULUSAL KONGRESİ, İstanbul, Turkey, 5 - 07 July 2017
- XI. **Discrimination of the origin of black tea samples: A data mining application**  
SOYLU B., OKUYAN N., KESMEN Z., YETİM H.  
International Conference on Agriculture, Forest, Food Sciences and Technologies, Nevşehir, Turkey, 15 - 17 May 2017
- XII. **The design of a cold chain logistics network for perishable food products and an application**  
SOYLU B., BEKTAŞ H. S. , KAYTANCI K., ERBAŞ A.  
International Conference on Agriculture, Forest, Food Science and Technologies, Nevşehir, Turkey, 15 - 17 May 2017
- XIII. **MULTI-FRAGMENT MELTING ANALYSIS SYSTEM (MFMAS) FOR IDENTIFICATION OF CANDIDA SPECIES**  
KESMEN Z., ÇELİK M., ÖZKÖK F. Ö. , Erdem Büyükkiraz M., Özbekar E., SOYLU B.  
IWBBIO 2017 (5th International Work-Conference on Bioinformatics and Biomedical Engineering), Granada, Spain, 26 - 28 April 2017, pp.44-48
- XIV. **Effects of storage conditions on aflatoxin production and expression levels of some biosynthesis genes of *Aspergillus flavus* in red pepper**  
SOYLU B., KESMEN Z., Yapar N., YETİM H.  
15th International Conference on Food Processing and Technology, Roma, Italy, 26 - 29 November 2016, vol.7, no.12, pp.65
- XV. **Local Branching Algorithm for Approximating the Pareto Set of the Multiobjective Set Covering Problem**  
WEERASENA L., WIECEK M., SOYLU B.  
INFORMS 2016 Annual Meeting, Nashville, 05 November 2016
- XVI. **İki Amaçlı Karışık Tamsayı Doğrusal Programlama Problemleri için Yinelemeli Araştırma Algoritması**  
SOYLU B.  
36. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 12 July 2016
- XVII. **An Algorithm to Approximate the Solutions of the Multiobjective Set Covering Problem**  
WEERASENA L., SOYLU B., WIECEK M.  
American Mathematical Society (AMS) Sectional Meeting, 01 March 2016
- XVIII. **Çoklu Gezin Satıcı Problemi İçin Genel Komşuluk Arama Sezgiseli**  
SOYLU B.  
Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) 35. Ulusal Kongresi, Turkey, 9 - 11 September 2015
- XIX. **İki amaçlı karma 0-1 doğrusal programlama problemleri için tam sonuç veren bir algoritma**  
YILDIZ G. B. , SOYLU B.  
YAEM, Ankara, Turkey, 9 - 11 September 2015
- XX. **An Exact Algorithm for Mixed 0-1 Integer Linear Programming Problems**  
YILDIZ G. B. , SOYLU B.  
MCDM, Hamburg, Germany, 2 - 07 August 2015
- XXI. **Küme Kapsama Problemi ve Ağ Ömrünün En Büyüklenmesi**  
KARA A., SOYLU B.  
34. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 25 - 28 June 2014

- XXII. **An Algorithm to Determine Efficiency Scores in Large DEA Data Sets**  
YILDIZ G. B. , SOYLU B.  
MCDM, Malaga, Spain, 17 - 21 June 2013
- XXIII. **A Bi-objective Mixed-Binary Set Covering Problem**  
SOYLU B.  
22nd International conference on Multiple Criteria decision Making, 15 June 2013
- XXIV. **Advancing Branch-and-bound Techniques for Mixed-integer Multiobjective Programming**  
BELOTTI P., SOYLU B., WIECEK M.  
INFORMS 2012 Annual Meeting, Phoenix, AZ, US, 01 October 2012
- XXV. **Seeding-based Evolutionary Algorithms for the Multiobjective Set Covering Problem**  
WEERASENA L., WIECEK M., SOYLU B.  
CORS MOGP 2012, Niagara Falls-Toronto, CA, 01 June 2012
- XXVI. **A New Approach to Sort Inventory Items and An Application**  
AKYOL B., YILDIZ G. B. , SOYLU B.  
INFORMS 2011 Annual Meeting, Charlotte, NC, US, 01 November 2011
- XXVII. **An Interactive Sorting Method and its Application to Sorting Sectors**  
SOYLU B., KAYHAN B., KÖKSALAN M. M.  
21st International Conference on Multiple Criteria Decision Making, 20 June 2011
- XXVIII. **A Bi-objective Max-Min Redundancy Allocation Problem and the Preference-ordered Classification**  
SOYLU B., KAPAN ULUSOY S.  
XXIVth Mini Euro Conference MEC-EurOpt 2010, Izmir University of Economics, 15 June 2010
- XXIX. **Süreç İyileştirme Amaçlı Tedarikçi seçim Problemi**  
GÖKALP B., SOYLU B.  
30. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2010
- XXX. **A Warehouse Space Allocation Problem in a Carpet Factory Considering Multiple Criteria**  
SOYLU B.  
23th European Conference on Operational Research, 05 July 2009
- XXXI. **An Evolutionary Algorithm for the Multi-objective Multiple Knapsack Problem**  
SOYLU B., Koksalan M.  
20th International Conference on Multiple Criteria Decision Making, Chengdu, China, 21 - 26 June 2009, vol.35, pp.1-3
- XXXII. **Çok Kriterli Sıralı Gruplara Ayırma Problemi için Tchebycheff Fayda Fonksiyonu Temelli Bir Yaklaşım**  
SOYLU B.  
29. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2009
- XXXIII. **A Multiple Criteria Sorting Approach with Tchebycheff Utility Function**  
SOYLU B.  
INFORMS Annual Meeting, Washington-DC, USA, 10 October 2008
- XXXIV. **Çok Kriterli ABC Stok Sınıflandırma Problemi için Tchebycheff Ölçüsü Temelli Bir Yaklaşım**  
SOYLU B.  
28. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 June 2008
- XXXV. **Multiple Criteria Inventory Classification Problem**  
SOYLU B.  
HDM 2008 International Conference on Multivariate Statistical Modeling and High Dimensional Data Mining, 01 June 2008
- XXXVI. **Öğretim Üyelerinin İş Yükü Seviyelerini Ölçmek için Bir Analitik Ağ Modeli ve Mühendislik Fakültesinde Bir Uygulama**  
BULUT K., SOYLU B.  
13. Ulusal Ergonomi Kongresi, Turkey, 01 December 2007
- XXXVII. **A Bi-criteria Hub Location Problem**  
SOYLU B., KÖKSALAN M. M.

- Euro XXII 22nd European Conference on Operational Research, Prague, Czech Republic, 08 July 2007
- XXXVIII. **İki Kriterli p-Merkez Üssü Yerleştirme Problemi ve Evrimci Bir Algoritma**  
SOYLU B., KÖKSALAN M. M.  
27. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 July 2007
- XXXIX. **A Multi-Criteria Evolutionary Algorithm for Generating the Efficient Frontier**  
SOYLU B., KÖKSALAN M. M.  
INFORMS 2006 International Conference, Hong Kong, 05 June 2006
- XL. **Evolutionary Search for Efficient Solutions in Multiple Criteria Combinatorial Optimization**  
SOYLU B., KÖKSALAN M. M.  
18th International Conference on Multiple Criteria Decision Making, Chania, Greece, 01 June 2006
- XLII. **A Favorable Weight Based Evolutionary Algorithm for Multiobjective Optimization Problems**  
SOYLU B., KÖKSALAN M. M.  
INFORMS Annual Meeting, San Francisco, USA, 05 November 2005
- XLIII. **Çok Amaçlı Birleşim Problemleri için Evrimci Bir Algoritma**  
SOYLU B., KÖKSALAN M. M.  
25. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 July 2005
- XLIV. **An Evolutionary Algorithm for Multiobjective Combinatorial Optimization Problems**  
SOYLU B., KÖKSALAN M. M.  
35th International Conference of Computers & Industrial Engineering, Istanbul, Turkey, 05 June 2005
- XLV. **An Evolutionary Algorithm for Multiobjective Combinatorial Optimization**  
SOYLU B., KÖKSALAN M. M.  
XI ELAVIO Latin American Summer Workshop on Operations Research, Bogota, Colombia, 01 June 2005
- XLVI. **Application of a Genetic Local Search Algorithm for Sequencing Problem on a Synchronous Flow Line**  
SOYLU B.  
XX 20th European Conference on Operational Research, Rhodes-Greece, 04 July 2004
- XLVII. **A Genetic Local Search Algorithm for Sequencing Problem on a Synchronous Flow Line**  
SOYLU B.  
24. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 15 June 2004
- XLVIII. **A Mixed Model Line Sequencing Problem with Makespan Minimization**  
SOYLU B., KIRCA Ö., AZİZOĞLU M.  
EURO/INFORMS International Meeting, Istanbul-Turkey, 01 June 2003
- XLIX. **Karışık Modelli Montaj Hatlarında Toplam Çevrim Zamanının En Azlanması için Sıralama Problemi**  
SOYLU B., KIRCA Ö., AZİZOĞLU M.  
22. Ulusal Yöneylem Araştırması ve Endüstri Mühendisliği (YAEM) Kongresi, Turkey, 01 July 2002

## Supported Projects

SOYLU B., TUBITAK Project, Çok Amaçlı Karma-Tamsayılı Doğrusal Programlama Problemleri İçin Yeni Yaklaşımlar, 2016 - 2019

SOYLU B., ENGÜR E., Project Supported by Higher Education Institutions, İKİ AMAÇLI P-ADÜ MERKEZ VE ADÜ KAPSAMA PROBLEMLERİ, 2017 - 2018

SOYLU B., KARA A., Project Supported by Higher Education Institutions, Ağ Ömrünü Enbüyükleme Amaçlı Küme Kapsama Problemleri, 2013 - 2014

SOYLU B., YILDIZ G. B. , Project Supported by Higher Education Institutions, Büyük Çaplı Veri Zarflama Analizi Modelleri İçin Yeni Yaklaşımlar, 2012 - 2013

SOYLU B., AKYOL B., YILDIZ G. B. , Project Supported by Higher Education Institutions, Çok Kriterli ABC Stok Sınıflandırma Problemi için Yeni Bir Yaklaşım, 2011 - 2012

SOYLU B., TUBITAK Project, Sektörel Sıralı Sınıflandırma Problemi Ve Kosgeb Hizmet Teşvikleri İçin Öncelikli Sektörlerin Belirlenmesi, 2010 - 2011

SOYLU B., GÖKALP B., Project Supported by Higher Education Institutions, Süreç İyileştirme Amaçlı Tedarikçi Seçim Problemi, 2009 - 2010

SOYLU B., BULUT K., Project Supported by Higher Education Institutions, Türkiye'de Kullanılan Ulaştırma Modlarının Çok Kriterli Karar Verme Yöntemleri ile Değerlendirilmesi, 2009 - 2010

### **Edit Congress and Symposium Activities**

İki amaçlı karma 0-1 doğrusal programlama problemleri için tam sonuç veren bir algoritma, Attendee, Turkey, 2015

Çoklu Gezin Satıcı Problemi İçin Genel Komşuluk Arama Sezgiseli, Attendee, Ankara, Turkey, 2015

An Exact Algorithm for Mixed 0-1 Integer Linear Programming Problems, Attendee, Hamburg, Germany, 2015

### **Citations**

Total Citations (WOS):219

h-index (WOS):11

### **Awards**

SOYLU B., En iyi bildiri (Best paper award), 2nd International Mediterranean Science and Engineering Congress, October 2017