Explaining Intra-Organizational and Extra-Organizational Factors Affecting Organizational Structure of Identity in Government Organizations

Reza Shafiezadehgarousi*

Department of Management, Islamic Azad University, Saveh Branch, Saveh, Markazi Provine, Iran

Abstract— One of the most important issues in management during recent years is organizational identity and forming the identity. However, there have been limited researches in this field. Today, there is a type of tendency towards increasing rate of displacement, decreasing job satisfaction, increasing absent from work, increasing alienation from work and lack of responsibility in personnel and in general, lack of identification of members with their organization in government organizations. The necessity for increasing the information of managers of those organizations about effective factors on formation of organizational identity and potential benefits induced by strong organizational identity is clearly observed. The current research aims to investigate intra-organizational and extra-organizational factors influencing the formation of organizational identity and to represent techniques for improving this issue. The mutual relations of these factors with organizational identity was evaluated through correlation method and the obtained results were indicated that there is a positive meaningful relationship between attention of media to the organization, external view of organization, external communications, chief administrators team, human resources management and intra-organizational communications with organization identity.

Index Terms— Organizational Identity, Social Identity, Company Identity, Identity Forming, Government Organizations, Intra-Organizational Factors, Extra-Organizational Factors, Affecting Organizational Structure

1 Introduction

dentifying the organizational identity and trying to develop Land support it is very important for managers; since identification of people with organization leads to reducing the absence from work by personnel, increase favorable behaviors for organization goals and finally lead to realizing organization goals. Regarding numerous researches about organization identity, there is a limited knowledge about formation and effective factors on this parameter. The current research aims to investigate the concept of organizational identity and to evaluate effective factors on its formation and their relationships with organizational identity. In general, identity theories argued that people show themselves to others through different groups that are member of those (working group, organization, and job) [12]. In the view of Georg Herbert Mid, any individual form his identity through organizing individual attitudes of others in the mold of organized social or group attitudes. Regarding this issue, Tajfel combined social identity with group membership and believed that group membership consists of three element; cognitive element, value element and feeling element. In this manner, social identity is a part of self-evaluation that originates from his/her knowledge about membership in social group(s). So, social identity is a type of self-analysis relative to others [2]. Individual may have national, religious, ethnical, social and political identities in the same time but these identities may not remain constant and intact and are always changing and are tended to be seen and to be confirmed [3].

The concept of organizational identity has been introduced by Albert and Veten in 1985 and consists of characteristics of an organization which have been understood by members as core, unique and continuous characteristics of organization [18]. Organizational identity aims to answer this question that "who we are as an organization?" [18]. Regarding the increasingly encountering of current organizations with changes and in order to appropriately manage the complicated environment that organizations must act in that, this is very important to define organizational identity [8]. Organizations form their identities through symbolic and verbal behaviors in specified fields. In this condition, the identity of organization forms verbally and actively through cultural patterns of organization such as uniforms, ideology, products, and traditions and so on [9]. Organizational identity leads the strategy and makes members able to select strategic direction of organization and to accept it and to respond against environmental changes [19].

Identity is a social structure which called as "show identity" and selects and displays for various auditions. In marketing and management, some researches have been performed about identity and the brand and fame of organization became a strategic tool. Firstly, this term was limited to logo and other visual design elements but gradually, relations and all forms of behavior in facing with external environment and market were involved. In new definitions, most of authors define the identity of organization as the reality of business. It means that identity defines the real part of company to stakeholders. However, identity is not only an image represented in the form of a visual scheme, but also is basically related to the question "what is organization?" [7]. Organization members form the organizational identity and use it to form themselves. This conflict and dialectic which is hidden in the heart of so-

^{• *}Reza Shafiezadehgarousi, Corresponding Author, Ph.D. in Human Resource Management and Assistant Professor, Department of Management, Islamic Azad University, Saveh Branch, Saveh, Markazi Provine, Iran.

cial identity theory is a source that the concept of organizational identity extracts from it [15].

In general form, organization identity represents to stakeholders using different signs and symbols and hence, ideal manager must use from coordinated signs and symbols so that coordinated and targeted messages send to stakeholders [1–44]. Company identity is obviously related to the concept of organizational identity and researchers emphasize on the importance of coordination between organizational identity (which explains by managers and experiences by personnel) with company identity and external and business face of company (an image that perceive by people and groups outside of organization); since if these element are not coordinated, a spectrum of unfavorable consequences will arise such as lack of job responsibility, customer dissatisfaction, and weakening of organization [45–90].

2 FORMATION OF IDENTITY

Organizations show and send their identity to two groups of internal and external audiences. Signs, symbols and messages which receive by members from internal and external environment affect their understanding on their organization. As the transmitted symbols from internal and external environment of organization have a critical role in formation of members' understanding, organizations can form a strong organizational identity through sufficient attention paying to both intra- and extra-organizational factors [16]. In the following, the most important factors affecting the formation and continuous creation of organizational identity are listed:

3 Media Attention

Fame and credit are the most important intangible assets of organizations for achieving competitive advantage. Hall explained that fame of organization is an intangible asset. Researches have been shown that media have a critical role in formation of public thoughts and beliefs and improving the image of organization in the society and this issue is justifiable based on highlighting theory [10]. The assumption that media affect public knowledge and thoughts is possible through their effects on fame and credit of organizations [10]. Today, media are tools for accurate evaluation of strategies, decision makings of managers and social responsibilities of organizations [16]. Positive attention of media to the organization creates a strong image of the organization and in turn, it forms a strong identity for members [14]. Activities toward the improvement of organizational identity lead to negative attention of media [11]. Researches have been shown that increasing the credit of organization through media lead to increase in personnel performance level [10]. So, if media manage appropriately, it can support the image of organization. The result of such positive attention is strength of organizational identity [11]. So, the first hypothesis of the current research is presented as following: Hypothesis (1): There is a positive meaningful relationship between positive attention of media to the organization and forming a strong organizational identity.

3.1 External Image of Organization

Gaining external image through gaining external rewards show the strength of organization compared to other rivals and locate the organization in an appropriate position. Organizations use their external images and rewards as a symbol for making and generalizing their core identity in the view of internal and external viewers [11]. The image of organization is an important issue since members analyze and compare the position of their organizations with rivals and are willing to be a member of successful organization [17]. In fact, appropriate organizational image transmit its success message and support organizational identity [11]. Elsebach and Kramer believed that organizational identity involves understanding of members on its position compared to others, and hence, members motivate against potential threats on position of organization [13]. Organizations who will to form their organizational identity or to strengthen it will try to reach higher position than rivals. So, the second hypothesis is defined as following: Hypothesis (2): There is a positive meaningful relationship between external image of organization and forming organizational identity.

3.2 External Communications of Organization

Organization forms its image through communication. Communication is a process that "used by stakeholders to understand the identity, image, fame and credit of organization" [5]. The content of communication from inside to outside of organization is effective for creating external image of organization. According to Oleans, the identity of each organization show itself through its products and services, environment, communications and behaviors. External communications of organization transmit its identity to external stakeholders and others. External communications is the products and strategies of public relations. These relations and products transmit the image and characteristics of organization to members and external audiences and contribute in forming organizational identity [11]. So, third hypothesis is represented as following: Hypothesis (3): There is a positive meaningful relationship between external communication of the organization and forming organizational identity.

3.3 Chief Administrators' Team of Organization

Understanding of chief administrators' team from organizational image affect their understanding on the environment of organization and formation of its identity. Researchers believed that organization image is an image that shows the characteristics that offered by chief administrators' team to organization. Elsebach and Kramer found that chief administrators try to represent a favorite image from the main characteristics of their organization. Chief administrators affect organizational identity and understanding of internal and external audiences through applying leadership skills, management measures and strategic decision making [11]. For instance, an organization that willing to form its identity as a high-tech and innovative organization needs to select members which have experience, fame, credit and knowledge. It can be said that agreement between fame, credit and knowledge of managers and core characteristics of organization lead to more strong identity [11]. So, the forth hypothesis is represented as following:

Hypothesis (4): There is a positive meaningful relationship between measures of chief administrators' team and forming organizational identity.

3.4 Human Resources Management

Focus on educational plans and innovation in the field of human resources management explains a strong message about major characteristics considered in organizational identity and the importance of these characteristics to managers and lead to strengthening of organizational identity [11]. Designing the systems for rewarding and performance criteria in order to reward members may lead to strong reaction of members toward identification of their identity. These measures lead to strengthening of major characteristics of organization and organizational identity [11]. So, fifth hypothesis is represented as following:

Hypothesis (5): There is a positive meaningful relationship between human resources management in the organization and forming organizational identity.

3.5 Internal Communications of Organization

There are numerous researches about the role of internal communications of organization on improving the identity of organization. For example, Smith, Prone, and Van Rile found that there is a relationship between communication atmosphere of organization and organizational identity [4]. Internal communications of organization are used to combine organizational strategies into the identity, coordinate the activities and make unity and loyalty in members. For example, internal communications can make tendency for becoming the largest bank in the region through some tools such as news, unofficial letters and electronic post. Such perspective is founded in the organization and members identify these characteristics [11]. So, sixth hypothesis is represented as following:

Hypothesis (6): There is a positive meaningful relationship between internal communications of organization and forming organizational identity.

3.6 Mission of Organization

Factors affecting the formation of organizational identity can be categorized into three groups of organizational structure, duties structure or mission of organization and reward structure. Some organizations encourage sharing ideas and information through short term measures such as temporary working coalition to strengthen their identity. Organizing by this method increases the necessity of cooperation between various units to enhance organizational identity [6]. Since policies of organization indicate the method of working, establishing appropriate policies is critical in formation of a strong organizational identity. For example, organization who are emphasized on better services to customers must ensure that their policies support this issue [11]. So, seventh hypothesis is represented as following:

Hypothesis (7): There is a positive meaningful relationship between mission of organization and forming organizational identity.

4 RESEARCH METHODOLOGY

The current research is an applied research, from goal point of view, and a descriptive (non-experimental) research, from data collecting point of view. It is a field research it is a cause research regarding the relation of its variables. Research was performed by surveying and one of its most important advantages is that its results can be generalized.

In the current research, media attention to organization, external image of organization, external communication, chief administrators' team, human resources management, mission of organization and internal communications are independent variables and organizational identity is dependent one.

Statistical population contains personnel of Ministry of Work and Social Affairs and sampling was performed randomly. Size of statistical sample was estimated as 253 people based on limited population formula and for ensuring, 280 questionnaires were distributed and 262 completed questionnaires were collected.

5 DATA COLLECTING TOOL AND ITS VALIDITY AND RELIABILITY

A questionnaire was used to collect data. In this regard, a scale was designed for media attention to organization, external image of organization, external communication, chief administrators' team, human resources management, mission of organization and internal communications as variables. Questions were clear and simple. The first organizational identity questionnaire was consisted of 12 questions but 4 questions were removed due to low functional load. 6 questions were designed for internal communications, external image of organization, mission of organization and external communication but 1 question was removed from external image of organization, mission of organization and external communication due to low functional load. 11 questions were designed for chief administrators' team but 2 questions were removed due to low functional load. In addition, 7 and 8 questions were designed for media attention to organization and human resources management but 1 question was removed from both due to low functional load. So, 51 questions were remained in questionnaire and based on Likert scale, an scale was designed for every one of those from 1 for strongly denied to 5 for strongly agree.

Cronbach alpha was used for evaluating the reliability of questionnaire and its value was 0.9 for organizational identity with 8 questions, 0.8 for media attention to organization with 6 questions, 0.89 for external image of organization with 5 questions, 0.91 for external communications with 5 questions, 0.8 for chief administrators' team with 9 questions, 0.9 for human resources management with 7 questions, 0.83 for mission of organization with 5 questions, and 0.83 for internal communications with 6 questions. Both functional and content validities of questionnaire were evaluated. To validate the content of questionnaire, experts were used as councilors. Functional validity of questionnaire was evaluated using software. The results showed that the model used for measuring the variables is appropriate. Values of Chi-square, RMSEA and ratio of Chi-square and degree of freedom were low while GFI and

AGFA were higher than 90%. All t values were meaningful and hence, it can be said that the questionnaire has high validity.

6 RESULTS AND DISCUSSION

In order to test the hypotheses, Spearman correlation tests was firstly used. Correlation coefficients of identity and independent variables are as following: media attention to organization (0.63), external image of organization (0.491), external communication (0.602), chief administrators' team (0.602), human resources management (0.55), mission of organization (0.345) and internal communications (0.587). One of the most promising methods is structural equations model. This is related to some general models including functional approving analysis 1, classic simultaneous structural models 2, route analysis 3, multi-dimensional regression, variance analysis 4, and other statistical methods. This method which called covariance structural analysis or LISREL can be used to test traditional models. In the current research, Lisrel 8.53 Software was used. Based on the obtained results, validity and reliability of model are confirmed, since chi-square, RMSEA and ratio of chisquare to degree of freedom are lower than 3 and GFI and AGFA are higher than 90%.

It can be seen that the effects of media attention to organization, external image of organization, external communication, chief administrators' team, human resources management, and internal communications on organizational identity are meaningful and hence, hypotheses 1 – 6 are confirmed.

7 CONCLUSION

In the current research, structural equation modelling shows a relationship between identity and media attention to organization (standard coefficient 0.71 and t-value 9.26), external image of organization (standard coefficient 0.23 and t-value 6.43), external communication (standard coefficient 0.33 and t-value 11.26), chief administrators' team (standard coefficient 0.75 and t-value 10.37), human resources management (standard coefficient 0.32 and t-value 5.32), and internal communications (standard coefficient 0.75 and t-value 8.32). So, hypotheses 1 – 6 are confirmed. In addition, this modeling shows there is not a relationship between identity and mission of organization (standard coefficient 0.75 and t-value 0.27). So, hypothesis7 is not confirmed.

It can be seen that media attention to organization, external image of organization, external communication, chief administrators' team, human resources management, and internal communications affect the formation of strong organizational identity.

Chief administrators have a critical role in formation of organizational identity. Their ability to make strategic decisions towards improving the position of organization and their fame and skills lead to better identity. Planning for educational courses aiming to familiarize managers with methods of decision making lead to better performance in critical cases.

As can be observed in results, organizations must pay attention to human resources management for improving organizational identities. In this regard, representing appropriate rewards is very effective. Internal communications of organization is very effective factor in formation of organizational identity. If mem-

bers understand the atmosphere of organization as support for themselves, the identity of organization may be improved through contribution of members in decision makings. Performing group activities outside the working area such as group sporting and traveling lead to better internal communications in the organization. This lead to improving the level of confidence in the organization and in this case, people form stronger identity in the organization.

Media attention to organization is very effective in formation of organizational identity since lead to creating solid image for audiences and members. So, activities of public relations are very important to absorb media attention to organization. In addition, it will be useful to make a peaceful relationship between managers and media so that media can gain their news and information directly from managers. The measures of organizations to form a suitable image for goals and objectives of organization are very useful. It is suggested to managers to take more social responsibility to create a mutual relationship between organization and society. In addition, analyzing social problems and their possible effects on organization can affect the external image of it. In this regard, it is suggested that a group of experienced people analyze various cultural, social, economic and political issues in the society and make proposals for possible reactions of the organization.

Since external communications transmit the organizational identity to foreign stakeholders, it is suggested for improving this issue to firstly identify the groups influencing by various activities of organization. Systematic review and paying attention to all stakeholders and their satisfactions affect the quality of external communications. Another suggestion is that organization must have strategic planning to identify external opportunities and threats as well as internal weaknesses and powers. In this manner, it is emphasized that educated and motivated people should be employed in order to present favorite services to visitors, to make compliant and suggestion system, and to continuous follow up of expectations and complaints regarding the feedbacks received from stakeholders about the performance of organization.

REFERENCES

[1] Nick Wildgoose, 6 - Supply Chain Risk Management, In Enterprise Risk Management, edited by Philip E.J. Green, Butterworth-Heinemann, Boston, 2016, Pages 75-87.

[2] Thomas B. Long, William Young, An exploration of intervention options to enhance the management of supply chain greenhouse gas emissions in the UK, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1834-1848.

[3] Danping Wang, Gang Du, Roger J. Jiao, Ray Wu, Jianping Yu, Dong Yang, A Stackelberg game theoretic model for optimizing product family architecting with supply chain consideration, International Journal of Production Economics, Volume 172, February 2016, Pages 1-18.

[4] Qiao Zhang, Wansheng Tang, Jianxiong Zhang, Green supply chain performance with cost learning and operational inefficiency effects, Journal of Cleaner Production, Volume 112, Part 4, 20 January 2016, Pages 3267-3284.

[5] Faisal Aqlan, A software application for rapid risk assessment in integrated supply chains, Expert Systems with Applications, Volume 43, January 2016, Pages 109-116.

[6] Frank Wiengarten, Paul Humphreys, Cristina Gimenez, Ronan McIvor, Risk, risk management practices, and the success of supply chain integration, International Journal of Production Economics, Volume 171, Part 3, January 2016, Pages

361-370.

- [7] Bo Li, Mengyan Zhu, Yushan Jiang, Zhenhong Li, Pricing policies of a competitive dual-channel green supply chain, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2029-2042.
- [8] Matloub Hussain, Mehmood Khan, Raid Al-Aomar, A framework for supply chain sustainability in service industry with Confirmatory Factor Analysis, Renewable and Sustainable Energy Reviews, Volume 55, March 2016, Pages 1301-1312.
- [9] Stephan Sluis, Pietro De Giovanni, The selection of contracts in supply chains: An empirical analysis, Journal of Operations Management, Volume 41, January 2016, Pages 1-11.
- [10] Han Wang, Richard Mastragostino, Christopher L.E. Swartz, Flexibility analysis of process supply chain networks, Computers & Chemical Engineering, Volume 84, 4 January 2016, Pages 409-421.
- [11] Nicoletta Paolucci, Fabrizio Bezzo, Alessandro Tugnoli, A two-tier approach to the optimization of a biomass supply chain for pyrolysis processes, Biomass and Bioenergy, Volume 84, January 2016, Pages 87-97.
- [12] Francesco Costantino, Giulio Di Gravio, Ahmed Shaban, Massimo Tronci, Smoothing inventory decision rules in seasonal supply chains, Expert Systems with Applications, Volume 44, February 2016, Pages 304-319.
- [13] Meng Sha, Rajagopalan Srinivasan, Fleet sizing in chemical supply chains using agent-based simulation, Computers & Chemical Engineering, Volume 84, 4 January 2016, Pages 180-198.
- [14] Kannan Govindan, Stefan Seuring, Qinghua Zhu, Susana Garrido Azevedo, Accelerating the transition towards sustainability dynamics into supply chain relationship management and governance structures, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1813-1823.
- [15] Ma Zu-Jun, Nian Zhang, Ying Dai, Shu Hu, Managing channel profits of different cooperative models in closed-loop supply chains, Omega, Volume 59, Part B, March 2016, Pages 251-262.
- [16] Nitaigour Mahalik and Kiseon Kim, 2 The Role of Information Technology Developments in Food Supply Chain Integration and Monitoring, In Woodhead Publishing Series in Food Science, Technology and Nutrition, edited by C.E. Leadley, Woodhead Publishing, 2016, Pages 21-37.
- [17] Anil Singh, James T.C. Teng, Enhancing supply chain outcomes through Information Technology and Trust, Computers in Human Behavior, Volume 54, January 2016, Pages 290-300.
- [18] Chong Wu, David Barnes, An integrated model for green partner selection and supply chain construction, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2114-2132.
- [19] Wenchong Chen, Jing Li, Xiaojie Jin, The replenishment policy of agri-products with stochastic demand in integrated agricultural supply chains, Expert Systems with Applications, Volume 48, 15 April 2016, Pages 55-66.
- [20] Xavier Brusset, Does supply chain visibility enhance agility?, International Journal of Production Economics, Volume 171, Part 1, January 2016, Pages 46-59.
- [21] Rosa Caiazza, Tiziana Volpe, John L. Stanton, Global supply chain: The consolidators' role, Operations Research Perspectives, Volume 3, 2016, Pages 1-4.
- [22] Fu Jia, Xiaofeng Wang, Navonil Mustafee, Liang Hao, Investigating the feasibility of supply chain-centric business models in 3D chocolate printing: A simulation study, Technological Forecasting and Social Change, Volume 102, January 2016, Pages 202-213.
- [23] Sónia R. Cardoso, Ana Paula Barbosa-Póvoa, Susana Relvas, Integrating financial risk measures into the design and planning of closed-loop supply chains, Computers & Chemical Engineering, Volume 85, 2 February 2016, Pages 105-123.
- [24] Mihalis Giannakis, Thanos Papadopoulos, Supply chain sustainability: A risk management approach, International Journal of Production Economics, Volume 171, Part 4, January 2016, Pages 455-470.
- [25] Marco Formentini, Paolo Taticchi, Corporate sustainability approaches and governance mechanisms in sustainable supply chain management, Journal of

- Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1920-1933.
- [26] Liang Tang, Ke Jing, Jie He, H. Eugene Stanley, Complex interdependent supply chain networks: Cascading failure and robustness, Physica A: Statistical Mechanics and its Applications, Volume 443, 1 February 2016, Pages 58-69.
- [27] Chun Hsion Lim, Hon Loong Lam, Biomass supply chain optimisation via novel Biomass Element Life Cycle Analysis (BELCA), Applied Energy, Volume 161, 1 January 2016, Pages 733-745.
- [28] Martin Tidy, Xiaojun Wang, Mark Hall, The role of Supplier Relationship Management in reducing Greenhouse Gas emissions from food supply chains: supplier engagement in the UK supermarket sector, Journal of Cleaner Production, Volume 112, Part 4, 20 January 2016, Pages 3294-3305.
- [29] Fouad El Ouardighi, Jeong Eun Sim, Bowon Kim, Pollution accumulation and abatement policy in a supply chain, European Journal of Operational Research, Volume 248, Issue 3, 1 February 2016, Pages 982-996.
- [30] Jun-Yeon Lee, Richard K. Cho, Seung-Kuk Paik, Supply chain coordination in vendor-managed inventory systems with stockout-cost sharing under limited storage capacity, European Journal of Operational Research, Volume 248, Issue 1, 1 January 2016, Pages 95-106.
- [31] Onur Kaya, Busra Urek, A mixed integer nonlinear programming model and heuristic solutions for location, inventory and pricing decisions in a closed loop supply chain, Computers & Operations Research, Volume 65, January 2016, Pages 93-103
- [32] Semih Coskun, Leyla Ozgur, Olcay Polat, Askiner Gungor, A model proposal for green supply chain network design based on consumer segmentation, Journal of Cleaner Production, Volume 110, 1 January 2016, Pages 149-157.
- [33] Marcel Bogers, Ronen Hadar, Ame Bilberg, Additive manufacturing for consumer-centric business models: Implications for supply chains in consumer goods manufacturing, Technological Forecasting and Social Change, Volume 102, January 2016, Pages 225-239.
- [34] Jianghua Wu, Ananth Iyer, Paul V. Preckel, Information visibility and its impact in a supply chain, Operations Research Letters, Volume 44, Issue 1, January 2016, Pages 74-79.
- [35] Felix T.S. Chan, Aditya Jha, Manoj K. Tiwari, Bi-objective optimization of three echelon supply chain involving truck selection and loading using NSGA-II with heuristics algorithm, Applied Soft Computing, Volume 38, January 2016, Pages 978-987.
- [36] Charbel José Chiappetta Jabbour, Ana Beatriz Lopes de Sousa Jabbour, Green Human Resource Management and Green Supply Chain Management: linking two emerging agendas, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1824-1833.
- [37] Riccardo Accorsi, Susan Cholette, Riccardo Manzini, Chiara Pini, Stefano Penazzi, The land-network problem: ecosystem carbon balance in planning sustainable agro-food supply chains, Journal of Cleaner Production, Volume 112, Part 1, 20 January 2016, Pages 158-171.
- [38] C.C. Craige, M.D. Buser, R.S. Frazier, S.S. Hiziroglu, R.B. Holcomb, R.L. Huhnke, Conceptual design of a biofeedstock supply chain model for eastern redcedar, Computers and Electronics in Agriculture, Volume 121, February 2016, Pages 12-24. [39] Felicity C. Denham, Wahidul K. Biswas, Vicky A. Solah, Janet R. Howieson, Greenhouse gas emissions from a Western Australian finfish supply chain, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2079-2087.
- [40] Birome Holo Ba, Christian Prins, Caroline Prodhon, Models for optimization and performance evaluation of biomass supply chains: An Operations Research perspective, Renewable Energy, Volume 87, Part 2, March 2016, Pages 977-989.
- [41] Sushil R. Poudel, Mohammad Marufuzzaman, Linkan Bian, Designing a reliable bio-fuel supply chain network considering link failure probabilities, Computers & Industrial Engineering, Volume 91, January 2016, Pages 85-99.
- [42] Cristina Sancha, Cristina Gimenez, Vicenta Sierra, Achieving a socially responsible supply chain through assessment and collaboration, Journal of Cleaner Pro-

duction, Volume 112, Part 3, 20 January 2016, Pages 1934-1947.

- [43] Carlos Miret, Philippe Chazara, Ludovic Montastruc, Stéphane Negny, Serge Domenech, Design of bioethanol green supply chain: Comparison between first and second generation biomass concerning economic, environmental and social criteria, Computers & Chemical Engineering, Volume 85, 2 February 2016, Pages 16-35
- [44] Sini Laari, Juuso Töyli, Tomi Solakivi, Lauri Ojala, Firm performance and customer-driven green supply chain management, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1960-1970.
- [45] Miriam M. Wilhelm, Constantin Blome, Vikram Bhakoo, Antony Paulraj, Sustainability in multi-tier supply chains: Understanding the double agency role of the first-tier supplier, Journal of Operations Management, Volume 41, January 2016, Pages 42-60.
- [46] Yuan-Hsu Lin, Ming-Lang Tseng, Assessing the competitive priorities within sustainable supply chain management under uncertainty, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2133-2144.
- [47] Sherif A. Masoud, Scott J. Mason, Integrated cost optimization in a two-stage, automotive supply chain, Computers & Operations Research, Volume 67, March 2016, Pages 1-11.
- [48] Mehmet Sekip Altug, Supply chain contracting for vertically differentiated products, International Journal of Production Economics, Volume 171, Part 1, January 2016, Pages 34-45.
- [49] Nelson Chibeles-Martins, Tânia Pinto-Varela, Ana P. Barbosa-Póvoa, Augusto Q. Novais, A multi-objective meta-heuristic approach for the design and planning of green supply chains MBSA, Expert Systems with Applications, Volume 47, 1 April 2016, Pages 71-84.
- [50] Hongyan Dai, Jianbin Li, Nina Yan, Weihua Zhou, Bullwhip effect and supply chain costs with low- and high-quality information on inventory shrinkage, European Journal of Operational Research, Volume 250, Issue 2, 16 April 2016, Pages 457-469.
- [51] Gül E. Kremer, Karl Haapala, Alper Murat, Ratna Babu Chinnam, Kyoung-yun Kim, Leslie Monplaisir, Ting Lei, Directions for instilling economic and environmental sustainability across product supply chains, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2066-2078.
- [52] Michal Kulak, Thomas Nemecek, Emmanuel Frossard, Gérard Gaillard, Ecoefficiency improvement by using integrative design and life cycle assessment. The case study of alternative bread supply chains in France, Journal of Cleaner Production, Volume 112, Part 4, 20 January 2016, Pages 2452-2461.
- [53] Pietro De Giovanni, Puduru V. Reddy, Georges Zaccour, Incentive strategies for an optimal recovery program in a closed-loop supply chain, European Journal of Operational Research, Volume 249, Issue 2, 1 March 2016, Pages 605-617.
- [54] Fatih Mutlu, Mohamed K. Msakni, Hakan Yildiz, Erkut Sönmez, Shaligram Pokharel, A comprehensive annual delivery program for upstream liquefied natural gas supply chain, European Journal of Operational Research, Volume 250, Issue 1, 1 April 2016, Pages 120-130.
- [55] Imen Nouira, Ramzi Hammami, Yannick Frein, Cecilia Temponi, Design of forward supply chains: Impact of a carbon emissions-sensitive demand, International Journal of Production Economics, Volume 173, March 2016, Pages 80-98.
- [56] Juhong Gao, Hongshuai Han, Liting Hou, Haiyan Wang, Pricing and effort decisions in a closed-loop supply chain under different channel power structures, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2043-2057.
- [57] Fang Zhang, Junhai Ma, Research on the complex features about a dual-channel supply chain with a fair caring retailer, Communications in Nonlinear Science and Numerical Simulation, Volume 30, Issues 1–3, January 2016, Pages 151-167.
- [58] Jianping Peng, Jing Quan, Guoying Zhang, Alan J. Dubinsky, Mediation effect of business process and supply chain management capabilities on the impact of Π

- on firm performance: Evidence from Chinese firms, International Journal of Information Management, Volume 36, Issue 1, February 2016, Pages 89-96.
- [59] Zhibing Lin, Price promotion with reference price effects in supply chain, Transportation Research Part E: Logistics and Transportation Review, Volume 85, January 2016, Pages 52-68.
- [60] Mark A. Jacobs, Wantao Yu, Roberto Chavez, The effect of internal communication and employee satisfaction on supply chain integration, International Journal of Production Economics, Volume 171, Part 1, January 2016, Pages 60-70.
- [61] Michael Becker-Peth, Ulrich W. Thonemann, Reference points in revenue sharing contracts—How to design optimal supply chain contracts, European Journal of Operational Research, Volume 249, Issue 3, 16 March 2016, Pages 1033-1049.
- [62] Yun Bai, Yanfeng Ouyang, Jong-Shi Pang, Enhanced models and improved solution for competitive biofuel supply chain design under land use constraints, European Journal of Operational Research, Volume 249, Issue 1, 16 February 2016, Pages 281-297.
- [63] Moza A. Al-Busaidi, David J. Jukes, Shekar Bose, Seafood safety and quality: An analysis of the supply chain in the Sultanate of Oman, Food Control, Volume 59, January 2016, Pages 651-662.
- [64] Jing Zhu, Tamer Boyaci, Saibal Ray, Effects of upstream and downstream mergers on supply chain profitability, European Journal of Operational Research, Volume 249, Issue 1, 16 February 2016, Pages 131-143.
- [65] Scott Unger, Amy Landis, Assessing the environmental, human health, and economic impacts of reprocessed medical devices in a Phoenix hospital's supply chain, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1995-2003.
- [66] Fengli Zhang, Dana Johnson, Mark Johnson, David Watkins, Robert Froese, Jinjiang Wang, Decision support system integrating GIS with simulation and optimisation for a biofuel supply chain, Renewable Energy, Volume 85, January 2016, Pages 740-748.
- [67] Vinod Kumar, Sushil Kumar Purbey, Ajit Kumar Dubedi Anal, Losses in litchi at various stages of supply chain and changes in fruit quality parameters, Crop Protection, Volume 79, January 2016, Pages 97-104.
- [68] Kenji Matsui, Asymmetric product distribution between symmetric manufacturers using dual-channel supply chains, European Journal of Operational Research, Volume 248, Issue 2, 16 January 2016, Pages 646-657.
- [69] Marcus Brandenburg, Supply chain efficiency, value creation and the economic crisis An empirical assessment of the European automotive industry 2002–2010, International Journal of Production Economics, Volume 171, Part 3, January 2016, Pages 321-335.
- [70] Byung-Gak Son, ManMohan Sodhi, Canan Kocabasoglu-Hillmer, Tae-Hee Lee, Supply chain information in analyst reports on publicly traded companies, International Journal of Production Economics, Volume 171, Part 3, January 2016, Pages 350-360.
- [71] Yun Huang, Kai Wang, Ting Zhang, Chuan Pang, Green supply chain coordination with greenhouse gases emissions management: a game-theoretic approach, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2004-2014.
- [72] David Richard Lyon, Chapter 3 Methane Emissions from the Natural Gas Supply Chain, In Environmental and Health Issues in Unconventional Oil and Gas Development, edited by Debra KadenTracie Rose, Elsevier, 2016, Pages 33-48.
- [73] Mingquan Cui, Maoying Xie, Zhina Qu, Sijun Zhao, Junwei Wang, Yang Wang, Tao He, Hongyu Wang, Zhicai Zuo, Congming Wu, Prevalence and antimicrobial resistance of Salmonella isolated from an integrated broiler chicken supply chain in Qingdao, China, Food Control, Volume 62, April 2016, Pages 270-276.
- [74] Michael F. Ashby, Chapter 5 Materials Supply-Chain Risk, In Materials and Sustainable Development, edited by Michael F. Ashby, Butterworth-Heinemann, Boston, 2016, Pages 85-100.
- $\cite{T5}$ Wei Wang, Gang Li, T.C.E. Cheng, Channel selection in a supply chain with a

International Journal of Scientific & Engineering Research, Volume 9, Issue 4, April-2018 ISSN 2229-5518

multi-channel retailer: The role of channel operating costs, International Journal of Production Economics, Volume 173, March 2016, Pages 54-65.

[76] S.M. Nazmul Alam, Chapter 6 - Safety in the Shrimp Supply Chain, In Regulating Safety of Traditional and Ethnic Foods, edited by Vishweshwaraiah PrakashOlga Martín-BellosoLarry KeenerSiân AstleySusanne BraunHelena McMahonHuub Lelieveld, Academic Press, San Diego, 2016, Pages 99-123.

[77] Annelies De Meyer, Dirk Cattrysse, Jos Van Orshoven, Considering biomass growth and regeneration in the optimisation of biomass supply chains, Renewable Energy, Volume 87, Part 2, March 2016, Pages 990-1002.

[78] Zhen-Zhen Jia, Jean-Christophe Deschamps, Rémy Dupas, A negotiation protocol to improve planning coordination in transport-driven supply chains, Journal of Manufacturing Systems, Volume 38, January 2016, Pages 13-26.

[79] Daniel Klein, Christian Wolf, Christoph Schulz, Gabriele Weber-Blaschke, Environmental impacts of various biomass supply chains for the provision of raw wood in Bavaria, Germany, with focus on climate change, Science of The Total Environment, Volume 539, 1 January 2016, Pages 45-60.

[80] Omid Sanei Bajgiran, Masoumeh Kazemi Zanjani, Mustapha Nourelfath, The value of integrated tactical planning optimization in the lumber supply chain, International Journal of Production Economics, Volume 171, Part 1, January 2016, Pages 22-33.

[81] I. Ribeiro, J. Kaufmann, A. Schmidt, P. Peças, E. Henriques, U. Götze, Fostering selection of sustainable manufacturing technologies – a case study involving product design, supply chain and life cycle performance, Journal of Cleaner Production, Volume 112, Part 4, 20 January 2016, Pages 3306-3319.

[82] Chunguang Bai, Dileep Dhavale, Joseph Sarkis, Complex investment decisions using rough set and fuzzy c-means: An example of investment in green supply chains, European Journal of Operational Research, Volume 248, Issue 2, 16 January 2016, Pages 507-521.

[83] Yong Shin Park, Gokhan Egilmez, Murat Kucukvar, Emergy and end-point impact assessment of agricultural and food production in the United States: A supply chain-linked Ecologically-based Life Cycle Assessment, Ecological Indicators, Volume 62, March 2016, Pages 117-137.

[84] Martha Demertzi, Rui Pedro Silva, Belmira Neto, Ana Cláudia Dias, Luís Arroja, Cork stoppers supply chain: potential scenarios for environmental impact reduction, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1985-1994.

[85] Laura Roibás, Aziz Elbehri, Almudena Hospido, Carbon footprint along the Ecuadorian banana supply chain: methodological improvements and calculation tool, Journal of Cleaner Production, Volume 112, Part 4, 20 January 2016, Pages 2441-2451.

[86] Heti Mulyati, Sustainability in Supply Chain Management Casebook: Applications in SCM: a book review, Journal of Cleaner Production, Volume 110, 1 January 2016, Pages 198-199.

[87] Katrina Lintukangas, Anni-Kaisa Kähkönen, Paavo Ritala, Supply risks as drivers of green supply management adoption, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 1901-1909.

[88] Jukka Hallikas, Katrina Lintukangas, Purchasing and supply: An investigation of risk management performance, International Journal of Production Economics, Volume 171, Part 4, January 2016, Pages 487-494.

[89] B.C. Giri, S. Sharma, Optimal production policy for a closed-loop hybrid system with uncertain demand and return under supply disruption, Journal of Cleaner Production, Volume 112, Part 3, 20 January 2016, Pages 2015-2028.

[90] Per Engelseth, Aligning end-to-end seafood supply through a series of markets, International Journal of Production Economics, Volume 173, March 2016, Pages 99-110.

