Prioritization of Customer Helping Behavior in Improvement the performance of Business Company in Iran with Using AHP-Analytic

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Abstract
In our increasingly competitive and changing world, organizations are looking for new ways to increasing your profits. Thus knowing Methods in which having a low price for the organizations that it helps to improve performance is good, such as customers helping behavior. In this paper, using a scale of organizational citizenship behavior as a valid model for studying the range of customer helping behavior is designed. The purpose of this paper is Prioritization customer helping behavior. Our statistical population consists of 520 managers in some Isfahan's business organization which 230 have been chosen by using stratified randomized sampling. We get our information by making researcher-made questionnaires with 13 items. This article focuses eight factors associated with customer helping behavior includes: providing feedback, responding to research, displaying brands, improving behavior, promote word of mouth, brand loyalty, Forgiving behaviors, increase the size and price of purchase through the fuzzy AHP-Analytic.

Keywords: customer helping behavior, fuzzy AHP-analytic, Organizational Citizenship Behavior

1. Introduction
Organizations ask for a lot from their customers these days. Johnson J. W. et al (2010) say "Extra to purchasing products, customers may be expected to forgive negative experiences (Aaker et al., 2004), pay premium prices (Thomson et al., 2005), and make loyal purchases (Verhoef, 2003). Customers are encouraged to attend brand-centered events (McAlexander et al., 2002), participate in brand communities (Muniz and O'Guinn, 2001), and communicate with other customers of a brand (Kozinets, 2002). Companies ask their customers to spread word of mouth (Jones et al., 2007), participate in research (Aggarwal, 2004), volunteer time (Sargeant
and Lee, 2004), and donate money (Brady et al., 2002). These attractive behaviors all help the company more than they benefit the customer."

This article purpose is Prioritization of Customer Helping Behavior in Improvement the performance of Business Company in Iran with Using AHP-Analytic, per a scale that are adapted from measure of multiple dimensions of customer helping behaviors used previously by Johnson J. W. et al. (2010). The following sections show the purpose of this research. At first, we describe the literature review. Then provide a description of the constructs that included in the proposed framework. Next, we describe proposed method which used to test framework and analysis results. Finally, the study was concluded by putting forward some conclusions.

2. Literature Review

A review of the consumer research literature revealed a number of customer behaviors, including donating money to non-profit organizations (Sargeant et al., 2006), volunteering time (Sargeant and Lee, 2004), spreading positive word of mouth (Brown et al., 2005), promoting or recommending brands to other customers (Verhoef, 2003), forgiving negative experiences (Fournier, 1998), and participating in marketing research or providing feedback to a company (Aggarwal, 2004). These behaviors have been extensively studied in the consumer research literature, but in isolation from each other, in spite of evidence of shared antecedents among them. For example, both charitable donations and volunteerism have been found to be predicted by altruism (Unger, 1991), social norms (Harrison, 1995), and commitment (Sargeant et al., 2006).

Lieke L. ten Brummelhuis, Tanja van der Lippe and Esther S. Kluwer (2010) in paper are name: Family Involvement and Helping Behavior in Teams with aim of expand their knowledge of helping behavior at work. They survey 6factors Family Involvement and Helping Behavior in Teams and concretized how family life can conflict with but also enrich helping behavior in teams.

Thomas Li-Ping Tang et al. (2008), Assemble structural equation model (SEM) of employee helping behavior involves (1) Intrinsic (Altruistic) Motives and Extrinsic (Instrumental) Motives of helping behavior, (2) self-reported Helping Behavior (a part of the altruism dimension of the OCB), and (3) the Love of Money.

Jennifer Wiggins Johnson, Adam Rapp (2010) in paper is name: A more comprehensive understanding and measure of customer helping behavior. They in paper sought to develop a measure of customer helping behavior by validating a multidimensional scale based on the OCB scale. They survey 9factors obtain: Expanding behaviors, Competitive information, responding to research, displaying brands, et al.

Customer also with these behaviors can helping to a company. Versus organizations providing affordable and comfortable place and properly encounter with customer and providing the best products and service in order to attract and retain customers. One of the limitations of existing
standards is, for example, spread word of mouth don’t spot additional helping behavior. These behaviors are intended to help organizations measure by the event were characterized of this behaviors with other customer helping behaviors and are not motivated by any Outputs.

3. Customer Helping Behaviors

Helping behavior is a part of Organizational Citizenship Behavior (OCB). Helping behavior was estimated according to whether or not the participant helped and how much the participant helped. Helping is a type of interpersonal, cooperative, and extra-role behavior directed towards members of one’s workgroup (Van Dyne & Le Pine, 1998).

In order to Prioritization of Customer Helping Behavior, we used a scale to surveys customer helping behaviors, used in the organizational behavior literature, for example: a scale from measure of multiple dimensions of customer helping behaviors used previously by Johnson J. W. et al. (2010), the Organizational Citizenship Behavior (OCB) scale used previously by Organ and Konovsky, 1989. The multiple dimensions of customer helping behaviors scale was developed and empirically validated as a measure of behaviors that survey of customer helping behavior. OCBs were defined as discretionary job behaviors which contribute to organizational effectiveness (Organ, 1988). Customer citizenship behavior is defined as “voluntary and discretionary behaviors that are not required for the successful production and/or delivery of the service but that, in the aggregate, help the service organization overall” (Groth, 2005, p. 11).

The validity of Customer citizenship behavior scale has been repeatedly tested and improved (Johnson J. W. et al., 2010), making it a good example of an empirically valid behavioral measure.

Hence, this paper improves the model of organizational citizenship behavior and develops a basic model in order to criteria for prioritization of customer helping behavior. As an organizational citizenship behavior model, the customer helping behavior model has provided for the future wider application consist of a wide range of customer helping behaviors. As well as, the organizational model, this model may all aspects of the customer helping behaviors is not considered. The model presented in Figure 1, dimension of customer helping behavior is considered.
4. Fuzzy AHP Methodology

Fuzzy set theory first was employed by Lotfi Zadeh in 1965 to solve problems. Fuzzy set theory is a valuable tool to strengthen the integrity and logical decision-making. In this paper have been used the linguistic variables to assess the priority and weight of these factors. These linguistic fuzzy numbers expression is trapezoidal or triangular fuzzy numbers. Then a multi-criteria decision making model based on the hierarchical theory of fuzzy sets is used for Prioritization marketing capabilities and operations capabilities that are effective in the organization performance of companies. Fuzzy numbers is one of the tools of fuzzy theory to represent uncertainty that can be specified with the membership functions $\mu(x)$, the triangular fuzzy numbers is specific type of trapezoidal fuzzy number in fuzzy applications, is very famous. Triangular fuzzy number $A$, the triangular number with membership function $A(x) \mu$ on $R$ is defined as a bottom relationship:
In the above equation \([L, U]\) the fulcrum interval and \([M, 1]\) \(D\) are the vertices.

4.1. Fuzzy AHP process

In this paper represented the concepts and definitions of fuzzy AHP based on the EA methods were presented by a scholar of Chinese name is Chang. Two triangular fuzzy numbers \((M_2 = (l_2, m_2, u_2), M_1 = (l_1, m_1, u_1))\) consider, are plotted in Figure 2, the arithmetic operators are defined as follows:

\[
\begin{align*}
M_1 + M_2 &= (l_1 + l_2, m_1 + m_2, u_1 + u_2) \\
M_1 \times M_2 &= (l_1 \times l_2, m_1 \times m_2, u_1 \times u_2)
\end{align*}
\]

It should be noted that the multiplication of two triangular fuzzy numbers or the inverse of a triangular fuzzy number, the other is not a triangular fuzzy number. This relationship are expressed only an approximation of the actual product of two triangular fuzzy numbers and reverse triangular fuzzy numbers.

In the EA method, for each row of a matrix of paired comparisons, the amount of Sk, which is a triangular number, calculation as follows:

\[
S_k = \sum_{j=1}^{n} M_{kj} \times \left[ \sum_{i=1}^{n} \sum_{j=1}^{n} M_{ij} \right]^{-1}
\]
K represents the number of rows and i and j respectively represent criteria and sub-criteria. In the EA method, then Sk is calculated, have achieved their large degree.

In general, if M1 M2 be two triangular fuzzy numbers, a large degree of M1 and M2, which show V (M1 ≥ M2), is defined as follows:

\[ \begin{align*}
V(M1 \geq M2) &= 1 \quad \text{if} \quad m_1 \geq m_2 \\
V(M1 \geq M2) &= hgt(M1 \cap M2) \quad \text{Otherwise}
\end{align*} \]

Also, we have:

\[ hgt(M1 \cap M2) = \frac{u_1 - l_2}{(u_1 - l_2) + (m_2 - m_1)} \]

A large amount of a triangular fuzzy number, further triangular fuzzy numbers as K is obtained from the following relationship:

\[ V(M1 \geq M2, \ldots, M_k) = V(M1 \geq M2), \ldots, V(M1 \geq M_k) \]

Assume that: \( D'(S_i) = \text{Min} \{V(S_i \geq S_k)\} \)

![Fig3. The intersection between M1 and M2](image)

The EA method, for computation criteria weight in paired comparisons matrix, we perform the following:

\[ W'(x_i) = \text{Min}\{V(S_i \geq S_k)\}, \quad k=1,2,\ldots,n, \quad k \neq i \]

Therefore, the weight vector of Criteria will be as follows:

\[ W'=[W'(c_1), W'(c_2), \ldots, W'(c_n)]^T \]

The normalized weight vectors are obtained as follows:
\[ W = (D(S_1), D(S_2), \ldots, D(S_n))^T \]

The consistency index (CI) and consistency ratio (CR) are calculated as follows:

\[
CI = \frac{\lambda_{\text{max}} - n}{n - 1} \quad \text{and} \quad CR = \frac{CI}{RI}
\]

(13)

Where \( \lambda_{\text{max}} \) is the largest Eigen value of the comparison matrix, \( n \) is the number of items being compared in the matrix, and RI is a random index, if the CR \( \geq 0.10 \), the decision maker has to make the pair wise judgments again (Saaty, 1990).

The questionnaire was designed according to the concept of fuzzy hierarchical approach and then questionnaire have been completed by managers and experts. Objective of questionnaires is criteria and sub- criteria Paired comparison. Fuzzy numbers are spotted to paired comparisons of the criteria is shown in Table 1.

<table>
<thead>
<tr>
<th>Linguistic scale for importance</th>
<th>Triangular fuzzy scale</th>
<th>Triangular fuzzy reciprocal scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equally important</td>
<td>(1/2, 1, 3/2)</td>
<td>(2/3, 1, 2)</td>
</tr>
<tr>
<td>Weakly more important</td>
<td>(1, 3/2, 2)</td>
<td>(1/2, 2/3, 1)</td>
</tr>
<tr>
<td>Strongly more important</td>
<td>(3/2, 2, 5/2)</td>
<td>(2/5, 1/2, 2/3)</td>
</tr>
<tr>
<td>Very strongly more important</td>
<td>(2, 5/2, 3)</td>
<td>(1/3, 2/5, 1/2)</td>
</tr>
<tr>
<td>Absolutely more important</td>
<td>(5/2, 3, 7/2)</td>
<td>(2/7, 1/3, 2/5)</td>
</tr>
</tbody>
</table>

6. Methodology Research

To create pair wise comparison matrices, a group of managers have been interviewed. Then, the fuzzy evaluation matrix relevant to the goal has been obtained with the consensus of them and they are located to a spreadsheet as shown in Table 2. Some examples of decision makers’ answers in the form of linguistic expressions about the comparison appropriate employee contact and quality of the product are given in figure 4. Furthermore, the consistency of the pair wise comparison matrices were examined and it was determined that all the matrices were consistent.
Table 2. The fuzzy evaluation matrix with respect to the goal

<table>
<thead>
<tr>
<th>scale</th>
<th>$C_1$</th>
<th>$C_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C_1$</td>
<td>(1, 1, 1)</td>
<td>(1/2, 2/3, 1)</td>
</tr>
<tr>
<td>$C_2$</td>
<td>(1, 3/2, 2)</td>
<td>(1, 1, 1)</td>
</tr>
</tbody>
</table>

By applying formula (2) given in Step 1:

$S_1 = (1.5, 1.66, 2) \times (0.2, 0.24, 0.286) = (0.3, 0.4, 0.571)$

$S_2 = (2, 2.5, 3) \times (0.2, 0.24, 0.286) = (0.4, 0.6, 0.857)$

Finally, by using formula (10), we obtain:

$V(S_1 \geq S_2) = 0.462$

$V(S_2 \geq S_1) = 1$

Therefore, the weight vector is calculated as:

$W' = (0.462, 1)$
The normalized weight vectors \( W_i = \frac{W_i}{\sum W_i} \) are obtained as follows:

\[
\begin{align*}
\text{C}_1 & \quad \text{C}_2 \\
W & = (0.684, 0.316)
\end{align*}
\]

After to create relative significance of goal for creates relative significance of sub-criteria, assess linkage each goal with sub-criteria. Then, the fuzzy evaluation matrix relevant to the sub-criteria has been obtained with the consensus of them and they are located to a spreadsheet as shown in Table 2. Some examples of decision makers’ answers in the form of linguistic expressions about the comparison behaviors and feedback are given in Table 3. Furthermore, the consistency of the pair wise comparison matrices were examined and it was determined that all the matrices were consistent.

**Table 3. The fuzzy evaluation matrix with sub-criteria**

<table>
<thead>
<tr>
<th></th>
<th>( A_4 )</th>
<th>( A_3 )</th>
<th>( A_2 )</th>
<th>( A_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( A_1 )</td>
<td>(1, 1, 1)</td>
<td>(2/7,1/3,2/5)</td>
<td>(7/2,8/3,10/3)</td>
<td>(2/7,1/3,2/5)</td>
</tr>
<tr>
<td>( A_2 )</td>
<td>(5/2,3,7/2)</td>
<td>(1, 1, 1)</td>
<td>(7/2,8/3,10/3)</td>
<td>(2,5/2,3)</td>
</tr>
<tr>
<td>( A_3 )</td>
<td>(3/10,3/8,2/7)</td>
<td>(3/10,3/8,2/7)</td>
<td>(1, 1, 1)</td>
<td>(2,5/2,3)</td>
</tr>
<tr>
<td>( A_4 )</td>
<td>(5/2,3,7/2)</td>
<td>(1/3,2/5,1/2)</td>
<td>(1/3,2/5,1/2)</td>
<td>(1, 1, 1)</td>
</tr>
</tbody>
</table>

By applying formula (2) given in Step 1:

\[
\begin{align*}
S_1 &= (5.071, 4.33, 5.13)^* (0.038, 0.044, 0.046) = (0.195, 0.192, 0.235) \\
S_2 &= (9, 9.167, 10.833)^* (0.038, 0.044, 0.046) = (0.346, 0.407, 0.496) \\
S_3 &= (3.6, 4.25, 4.57)^* (0.038, 0.044, 0.046) = (0.138, 0.188, 0.209) \\
S_4 &= (4.16, 4.8, 5.5)^* (0.038, 0.044, 0.046) = (0.160, 0.213, 0.252)
\end{align*}
\]

Finally, by using formula (10), we obtain:

\[
\begin{align*}
V(S_1 \geq S_2, S_3, S_4) &= \text{Min}(0.005, 1, 0.784) = 0.005 \\
V(S_2 \geq S_1, S_3, S_4) &= \text{Min}(1, 1, 1) = 1 \\
V(S_3 \geq S_1, S_2, S_4) &= \text{Min}(0.018, 0.230, 0.074) = 0.018 \\
V(S_4 \geq S_1, S_2, S_3) &= \text{Min}(1, 0.204, 1) = 0.204
\end{align*}
\]

Therefore, the weight vector is calculated as:
W' = (0.005, 1, 0.018, 0.204)

The normalized weight vectors \( W_i = \frac{W_i}{\sum W_i} \) are obtained as follows:

\[
\begin{array}{cccc}
A_1 & A_2 & A_3 & A_4 \\
W = (0.004, 0.815, 0.015, 0.166)
\end{array}
\]

And similarly were normalized scores obtained from questionnaires questionnaire in order to calculate the indicators relative weights measure the quality of goods. Matrix of relative weights of these options is as follows:

\[
\begin{array}{cccc}
A_5 & A_6 & A_7 & A_8 \\
W = (0.294, 0.212, 0.267, 0.226)
\end{array}
\]

7. Discussion

Diversity and complexity of business decisions and dynamic business environment, organizations need to find ways to improve performance to stay competitive in this environment has increased. This article sought to develop a more comprehensive measure of customer helping behavior by validating a multidimensional scale based on the OCB scale. Our goal was to develop a scale that was both empirically valid and generalizable to different contexts and industries. Our analysis found that there are distinct but interrelated dimensions of customer helping behavior.

Customer helping behaviors are organizational citizenship behavior within an organization. We have demonstrated reliability, homological and external validity, and a robust ten-dimensional structure to our scale. By enabling researchers to examine the effects of these variables on multiple helping behaviors, our scale will provide for a deeper understanding of the variety of customer helping responses and allow for more accurate predictions of customer helping behaviors.

The above analysis showed that the various dimensions of customer behavior are each there to help in improvement the performance of company. All results show between Proper encounter of staff and quality of the product indicators to increase the customer helping behaviors, the quality of the product will be more effective.

Therefore, organizations for use of the opportunities and improve their performance should be more attention to their quality of product and then staff. Also among the quality of the product sub-criteria studied, respectively (table 4, table 5): Spread word of mouth, brand loyalty, increasing quantity, and increasing price and among the Proper encounter of staff sub-criteria studied, respectively: providing feedback, displaying brands, Responding to research and forgiving behaviors, as the customer helping behavior are important, so organizations with a focus on these two indicators can be effective in increasing the customer helping behaviors,
behaviors that help improve organizational performance without involve a cost for organizations.

Table 4. Product quality indicator rankings related to customer helping behavior

<table>
<thead>
<tr>
<th>Series</th>
<th>Scale</th>
<th>Final score</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spread word of mouth</td>
<td>0.003</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Increasing quantity</td>
<td>0.557</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Brand loyalty</td>
<td>0.010</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Increasing price</td>
<td>0.114</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 5. Proper encounter of staff indicators Ranking related to help the customer helping behavior

<table>
<thead>
<tr>
<th>Series</th>
<th>Scale</th>
<th>Final score</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Providing feedback</td>
<td>0.093</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Forgiving behaviors</td>
<td>0.067</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Displaying brands</td>
<td>0.085</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Responding to research</td>
<td>0.071</td>
<td>3</td>
</tr>
</tbody>
</table>

Thus, these eight types of helping behaviors are more important to help of the organization respectively: spread word of mouth until the last customer helping behaviors, for example, if customers do spread word of mouth behavior promotion of the organization have the greatest help. This review focuses on customer helping behaviors and can help organizations to improve performance in today's competitive environment. Behaviors that help organizations stand out in the business environment, without spending advertising cost for the organization, get feedback from customers. However, while we acknowledge that the selection of dimensions or behavioral items based on applicability to the context and opportunity for customers to perform the behaviors is necessary, we encourage researchers not to limit their focus to a particular behavior or set of behaviors, but instead to capture the breadth of ways in which customers engage in behaviors to help organizations.

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