# Trust Building in Humanitarian Services Supply Network

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**Original Article**


## Abstract

**INTRODUCTION:** Due to the increasing trend of natural and manmade disasters in the contemporary world, especially in Iran, as well as the variety and high number of disasters in recent years, the issue of managing the humanitarian services supply network has become very important. The purpose of this study is to design and evaluate the model of trust building in the humanitarian services supply network, considering the importance of building trust in these networks and theoretical poverty in this field.

**METHODS:** For doing this study, three recent major disasters in Tehran province, Iran, (Plasco accident, Shahran explosion and metro flood) were selected and had been studied and the trust building model in humanitarian service supply network is designed using Corbin and Strauss grounded theory version 2015 based on interviews with 8 humanitarian experts in that three disasters. Then, the relationships between the model's components were investigated by Structural Equation Modeling with a researcher-made questionnaire distributed among 128 individuals participating in the above events.

**FINDINGS:** The final model is designed in three phases of conditions, actions, and consequences based on grounded theory. Poor community structures and community management systems are a major obstacle to trust building and political power interventions, insufficient funding, uncertainty of the responsible person, unsuccessful performance, lack of coordination and cooperation of the responsible working groups, and lack of readiness are the main factors of distrust. The main components of the model are highly correlated and the components have significant relationships.

**CONCLUSION:** The research final model can solve the existing problems in Iran's humanitarian services supply network by building trust among organizations, members of the network and finally among the community people. Building trust enhances intra-network collaboration, and achieves the success and goals of the relief network through establishing greater coordination and cohesion. The dominance of the political factors in the relief network is also a major obstacle to obtaining the needed information and making good cooperation by those present in the network and thus, the involvement of political actors in the humanitarian supply network should be prevented.


**Keywords:** Trust; Humanitarian Services Supply Network; Grounded Theory; Structural Equation Modeling

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## Introduction

Trust is a key concept in supply chain management (1,2) that has been specifically applied in the literature in conjunction with supply chain collaboration (3). Fawcett et al. identified the lack of trust among the cross-functional and inter-organizational teams as one of the most important barriers to the effective implementation of supply networks (4). However, sometimes teams and supply networks are temporary, and unlike most previous studies that have examined trust based on long-term

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relationships, trust has not been thoroughly investigated in temporary networks. Temporary networks are made up of individuals who: 1. gather quickly, 2. come from different communities, 3. work together in a shared chat space, 4. plan and are committed to performing their tasks, and 5. perform large and emergency missions, and thus the type of trust in the temporary networks is different from a permanent, long-term network. In recent years, natural and manmade disasters are taking place with greater frequency and intensity (5). Humanitarian operations are carried out with the aim of preserving the lives and reducing the suffering of individuals in crises and include providing materials and technical assistance along with providing essential services in critical situations, as the ability of communities to cope with these difficulties is severely limited in these circumstances. Humanitarian operations are of a temporary nature and are aimed at restoring the self-sufficiency of the affected communities. In most previous studies, trust has been defined and conceptualized based on the long-term relationships (6,7), but what is important in the relief and humanitarian networks is the building of trust and trust-based relationships between members in the short-term and on a temporary basis (8).

The humanitarian supply network is a branch of the relief network that is used in the preparation and response phases of the crisis management system, and is generally the efficient and cost-effective planning, execution, and control of the flow and storage of goods and materials and information from the point of origin to the destination point to relieve the problems among the affected people. This network covers a wide range of activities such as preparation, planning, procurement, transportation, warehousing, routing as well as customs clearance (6). The humanitarian supply chain involves many actors who differ in terms of culture, goals, interests, commitments, capacity, as well as expertise (9). What is important is paying attention to the relationships between these actors in a humanitarian supply chain.

Relying on the personality, ability, power, and truth of any person or thing with trust, or trusting in the characteristics of an object or individual or its reality and state is called trust. Typically, one being can trust a second one when the first being can assume that the behavior of the second being is consistent with him (10).

Regarding the business relations, Ring and Van de Ven define trust as the assurance that the opposing organization is acting based on its expectations, and in fact, they consider it as good faith (11). Based on the trust principle, customers tend to rely on and trust in the members of the supply chain to provide reliable information about the product and service provided and to guarantee the quality of the final product (12,13). Identifying the level of trust in the supply network members is crucial to designing the right strategies to build and enhance customer trust and confidence (14) and has a significant impact on the supply network integration. Since the requirement of using the grounded theory (GT) methodology in modeling is the inadequacy of the previous models in describing a variable (15), the inadequacy of the previous models of trust building in supply networks is presented in Table 1.

One of the important theoretical gaps in the present study is the lack of a comprehensive approach to design and evaluate an integrated model of trust building in the humanitarian service supply network. Given the novelty of the humanitarian supply chain, there has been no comprehensive study on how to identify, build, and evaluate trust in the humanitarian supply chain. In addition, given the disastrous nature of Iran (natural and man-made disasters), designing a trust building model in the relief network can be a great step towards resolving problems in this area. In this regard, the this study was accomplished with the objective to design and evaluate a model to build trust among members of the humanitarian and relief network using the mixed method of grounded theory and structural equation modeling.

## Methods

The overall purpose of the present study was to design a model of trust building in the humanitarian service supply network and to evaluate the relationships among its components. Due to the exploratory nature of the study, the mixed modeling process was carried out. In fact, the design of the model was performed based on the grounded theory proposed by Corbin and Strauss, and the causal relationships of the elements of the model were designed using the partial least squares structural equation modeling (PLS-SEM).



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**Table 1.** Inadequacy of trust building models in supply networks

| Authors | Model/Variables/Study area | Supply chain type | Reasons for model inadequacy in humanitarian supply chain |
|---|---|---|---|
| Paparoidamis et al. (16) | Product quality, sales service quality, technical support, and complaint management services affect the trust in suppliers and this trust leads to customer loyalty. | Service chains in the UK, France, and Hungary | Relationships are considered to be long-term. The goal of relief is not to earn money and financial issues. The cultural issues and commonalities have not been regarded. |
| Holtgrave et al. (17) | Output, process, norm, and long-term control of relationships influence the trust and ultimately the relational performance. | German textile industry | Important variables such as risk, culture, role, and law have been overlooked in relief networks. |
| Ojha et al. (18) | Effect of trust on organizational learning, entrepreneurship, and innovation | Industry | Trust is only one independent variable. The perspective is long-term. |
| de Almeida et al. (19) | The constituent elements of trust include emotional trust, internal trust, external trust, and trust in competence. | Literature review | The goal of relief is not to earn money and financial issues. Relationships are considered to be long-term and the cultural issues and commonalities have not been regarded. |
| Wang et al. (20) | Decline in the destroyed customer trust in the supplier based on the theory of justice | China's industry | The ultimate goal of the model is to maintain the customer's continued purchasing from the supplier, while the relief networks are completely temporary and benevolent. |
| Fawcett et al. (4) | Trust building leads to improved collaboration, innovation, and competitive performance. The maturity of trust leads to lower project risk. | Literature review | Failure to provide models and relationships and how to build trust in the chain. The risk involved is more of the business and project risk. |
| Nyaga et al. (21) | The information sharing and shared relationships affect trust but dedicated capital does not affect trust building in the chain. | Industry | Factors such as culture, risk, commitment, and role that are very evident in relief networks have not been explored. |
| Hua et al. (22) | The proportionality of flexibility of physical distribution and the proportionality of flexibility of demand management affect chain trust and trust also affects performance. | China's industry | Factors such as culture, risk, role, and law that are very evident in relief networks have not been explored. |
| Cheng et al. (23) | Factors influencing trust including shared values, partnerships, communication, learning capability, opportunistic behavior, power and resource appropriateness, and trust affects the inter-organizational information sharing. | Taiwanese manufacturing companies | The effect of perceived risk on trust and the role (competence) of individuals and the laws special for the temporary and critical conditions in trust building has been overlooked. |
| Lin et al. (24) | The ability, benevolence, and integrity of the supplier and the perception of trust are the prerequisites for establishing customer confidence in the supplier. | Industry | This model is based on the patterns of the market demand and the continuity of customer confidence and loyalty to the supplier, and certainly cannot be a comprehensive model under risk and unexpected conditions. Model outputs are considered based on the nature of the market. |

In the first step, the study data were collected through in-depth interviews and document study and analyzed using Nvivo.10 software. The statistical population of the study included organizations and individuals involved in relief operations of the last three major incidents in Tehran Province, Iran, including: Plasco building fire-accident, Shahran explosion incident, and Tehran metro flood event. The selection of the three incidents was based on the opinion of the experts of the crisis management staff of Tehran Province on the basis of the relative success of the operations and the scope of operations.

In the second step, developing a researcher-made questionnaire and obtaining the opinion of the experts, during the field process and distributing the questionnaire to 128 individuals in the study society, the necessary data were collected and analyzed by SPSS and Smart PLS statistical software. The individuals selected were experts in the desired disaster relief and eight interviews were conducted, and the interviewees were initially selected based on the recognition principle and then using the snowball technique. The sampling condition was reaching the saturation of 1+. These individuals included chiefs and deputies of the crisis management staff, the emergency medical center, the water and wastewater organization, the Red Crescent population operations and rescue department, the Red Crescent population relief team, the Red Crescent population volunteer's affairs, the Red



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Crescent population training and research members, and a member of the non-governmental organizations (NGO), and a volunteer associate of the Red Crescent population. Given the importance of experience in qualitative studies, the interviews emphasized the experiences of individuals. All variables obtained by the Corbin and Strauss method were divided into three areas of conditions, measures, and consequences (15).

## Findings

In the modeling process, after conducting the interviews, 443 codes were extracted as the key points of the interviews as the open source codes that best conveyed the interviewees' concepts and intentions to the interviewees. The codes selected were repeatedly analyzed and categorized to represent the trust building process in the humanitarian service delivery chain with the minimum number of words possible. Based on the evaluation of the homogeneous open source codes with perceptual similarity, concepts containing the meaning of several open source codes were explained. In the following, comparing and integrating the axial codes (derived concepts), categories abstractly representing a number of common axial concepts or codes were introduced, and finally three main areas (underlying conditions, actions, and consequences) were obtained. In this regard, the initial open-source codes, after a classification step, as 45 codes were categorized in the form of primary axial codes. In the next step, the final axial codes were categorized under 17 selected codes.

***Underlying conditions:*** The conditions specifying the main context for the trust building process in the humanitarian service network consisted of four components (selected codes) of existing situation, structures, community management system, and time phase as illustrated in Figure 1.

The existing situation is the one in which the trust building process is formed. According to the interviewees, there were two situations in which trust was not the same, trust in normal and critical situations. In a normal situation, one can trust a person if he has a prior cognitive and mental background of them, but in critical conditions, based on the needs, the incident affected person is forced to trust the people who come to deliver service and relief, and the type of trust is quite different in these two cases.

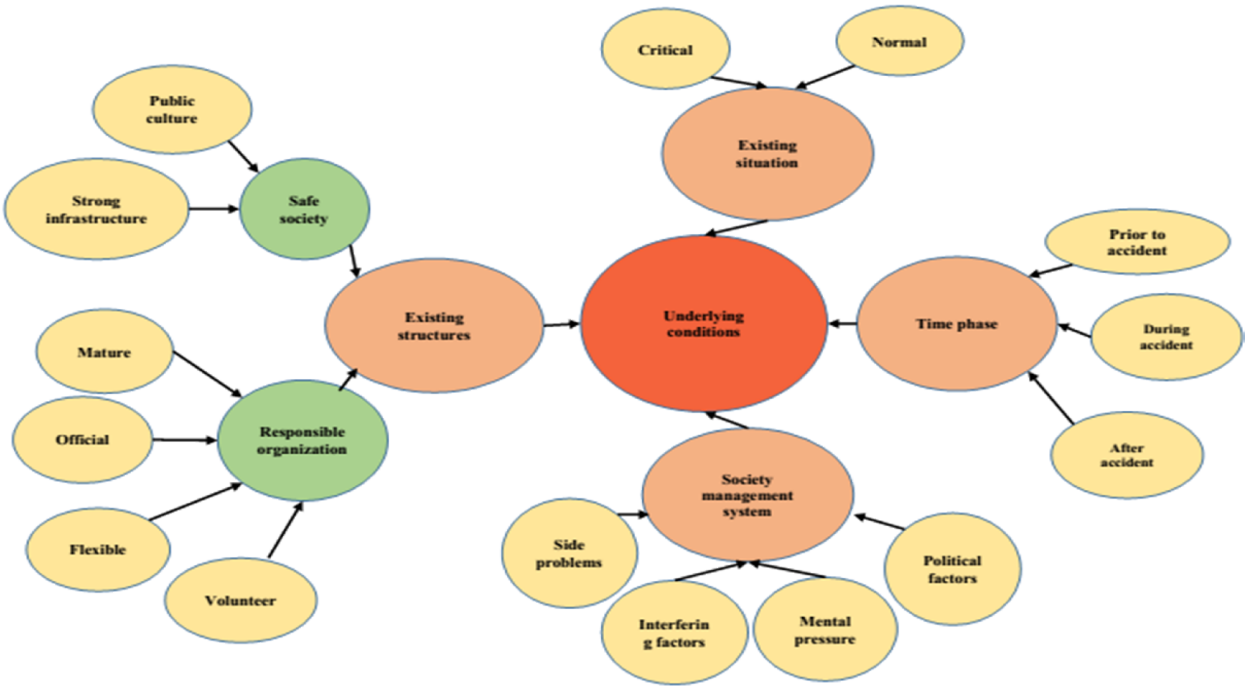



**Figure 1.** Components of the underlying conditions for trust building in the humanitarian service network

The organizational and community structures should be in a form to facilitate the trust process in normal conditions, and particularly in critical conditions and incidents. From a structural point



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of view, a society must be safe and resilient and able to live with an accident, rather than disrupting the process of life when occurring disasters, including natural disasters and disasters due to industrialization made by humans. Structures should be designed (prior to an accident) so that accidents do not occur in the first place and, if they occur, have the least casualties and financial losses. Strong and secure infrastructures that form the basis of today's dynamic and modern societies have a special role to play in this regard. For example, strong earthquake and storm-resistant buildings, standard communication roads, and modern urban facilities can be mentioned. Another component that forms the structure of the society and relates to the human population is public culture. This factor affects the previous one (strong infrastructure). According to the culture governing a society, the majority of people may easily or hardly trust each other in their dealings, so the general culture of the community plays a prominent role in building trust.

Additionally, the structure of the organization responsible in the events provides the ground to provide humanitarian services in the best way as quickly as possible. If the organizational structure is formalized according to standards and formally and the duties and responsibilities are properly divided, the organization will perform its task without a problem and with minimal disruption to the organization and the incident will be controlled. Obviously, developed and mature organizations, far more complete and superior to the bureaucratic organizations involved in obstructive administrative law, are able to fulfill their organizational obligations and duties. The community management system is an important component that can be claimed to be more important in the trust building process compared to the other two components and in itself is a ground for realization or non-realization of the previous cases. The political factors that influence trust can either help or hinder trust, and even promote mistrust. The dominance of power and politics in Iran's humanitarian supply chain has been one of the main causes of public distrust in this chain. There are also disruptive factors that slow down the process of trust or even stop it and cause distrust. In contrast, factors such as experts, celebrities, and artists can make the process of trust building faster and better. Mental stress imposed on the society and relief factors causes distrust, affecting any action, and is an obstacle to performing better and providing better services. Other problems emerge at the time of the accident that disrupt the activities and progress of the tasks. The time phase is also another factor which is divided into three parts: pre-accident, intra-accident, and post-accident, and includes a crisis management cycle that includes relief, preparation, response, and reconstruction. Paying attention to and taking appropriate action to each phase speed up the trust building process.

***Measures:*** These factors provide the basis for the key interaction in the five key variables of organizational communication, potential utilization, logistics reinforcement, management improvement, and trust building behaviors and involve action and reaction between the responsible organization and the ones who trust in. Figure 2 displays the axial and optional codes of measures.

*A. Trust building behaviors:* Trust building behaviors include factors that convince an individual that trusting in the other people is beneficial and useful for them, and their desires and needs will be responded by building trust.

*B. Potential utilization:* Every person or organization has innate potential that plays a positive role in building trust. Properly and timely application of these abilities facilitates and accelerates success. The positive background of the individual or organization, the status of the organization in terms of brand-specific contacts, and the staff of the organization with the attribute of competence are key and important components that have a positive effect on building trust.

*C. Organizational communication:* Given that the trust process is created through action and reaction between the parties. Bilateral communication is a central factor in the trust issue. The key point in the organizational communication is integrity and consistency. Creating inter-organizational coordination helps build trust.

*D: Improving management:* One of the important trust building processes that one can undoubtedly claim to overshadow other processes and their success or failure depends on which is the management system.

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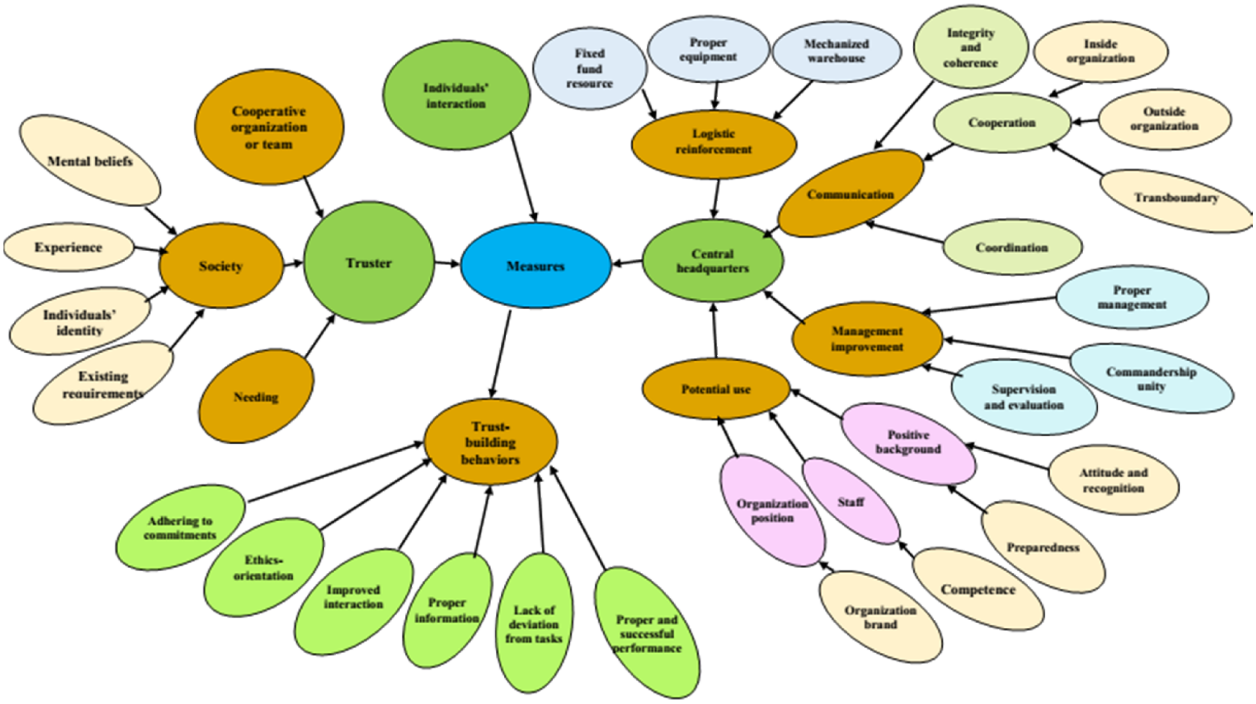



**Figure 2.** Components of trust building actions in the humanitarian service network

In fact, the coherence and integration of activities and operations that require the cooperation of several independent agencies depends on the management and organization of the circumstances by the senior managers and officials involved in managing the crisis. Strong and capable management fully controls of all aspects of the incident with timely recall of all rescue forces and agents, defining the tasks and roles of each organization or rescue team, and coordinating the progress of activities.

*E: Logistics reinforcement:* Having sufficient funding and strong background in terms of both specialist and technical forces and financial resources can ensure achieving the end goal and prevent any shortcomings and potential obstacles to success. Lack of strong logistics slows down the pace of operations, and may even lead to their stoppage. This category consists of three components: fixed funding sources, appropriate tools and equipment, and adequate mechanized warehouses. Specifying the sources of fixed funding refers to the line of sufficient funding for the crisis management staff and its official rules and regulations. In addition, appropriate tools and equipment include a range of machinery and equipment, automobiles, and the most up-to-date relief equipment. A series of urgent items is needed at the time of the event that needs to be prepared and maintained in advance. Therefore, ensuring that there are mechanized warehouses that cover the basic needs of the time of disaster and will not be depleted when needed by the relief workers will build public trust.

***Consequences:*** Based on the model, the results and consequences of trust can be positive or negative. In fact, in an interaction between individuals, if the trust process goes well, it has a positive outcome and the trust between the parties is achieved and mutual benefits are achieved. Otherwise, it may lead to distrust and lack of cooperation. Figure 3 demonstrates the positive and negative consequences of trust.

The negative consequences of trust can be classified into two categories. Sometimes, no trust is formed between the parties and mistrust is established between them, and sometimes the trust built is misused and causes damages to one of the parties. However, this does not mean that trust should not be built, rather the trust building process should be performed properly, and deviation, which is an obstacle to the realization of useful and positive outcomes, should be prevented. The entire components of the trust building model in the humanitarian network and the final trust building model in the humanitarian network are shown in Figures 4 and 5, respectively.



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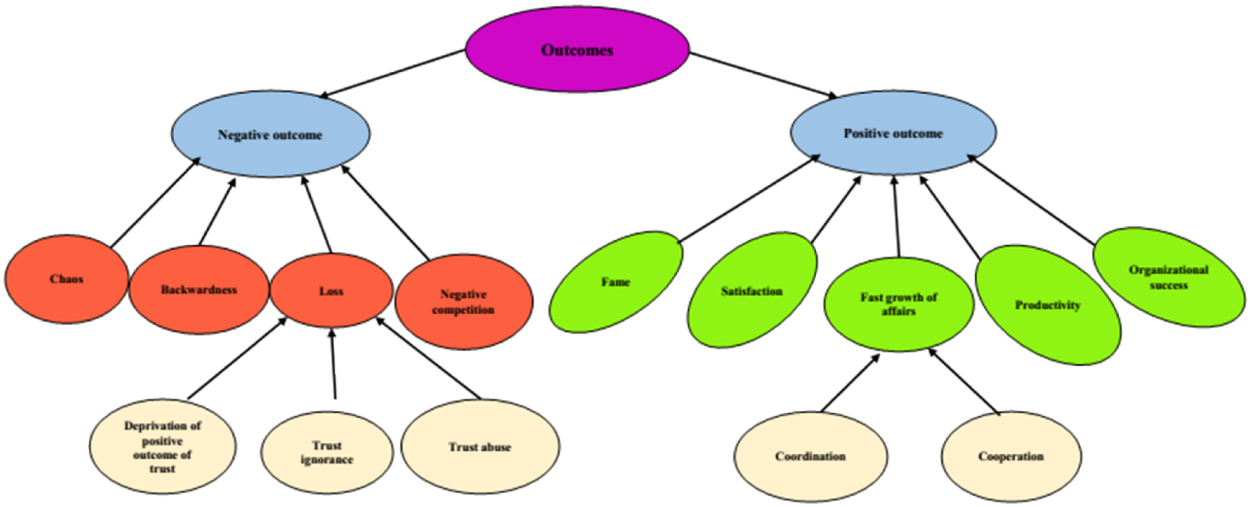



**Figure 3.** Positive or negative consequences of trust in the humanitarian service network

After designing and presenting the trust model to show the effect of relationships between the identified components on each other, the following hypotheses were developed:

- The "position" factor has a significantly positive effect on "trust".
- The "time phase" factor has a significantly positive effect on "trust".
- The "structures" factor has a significantly positive effect on "trust".
- The "community management system" factor has a significantly positive effect on "trust".
- The "trust building behaviors" has a significantly positive effect on "trust".

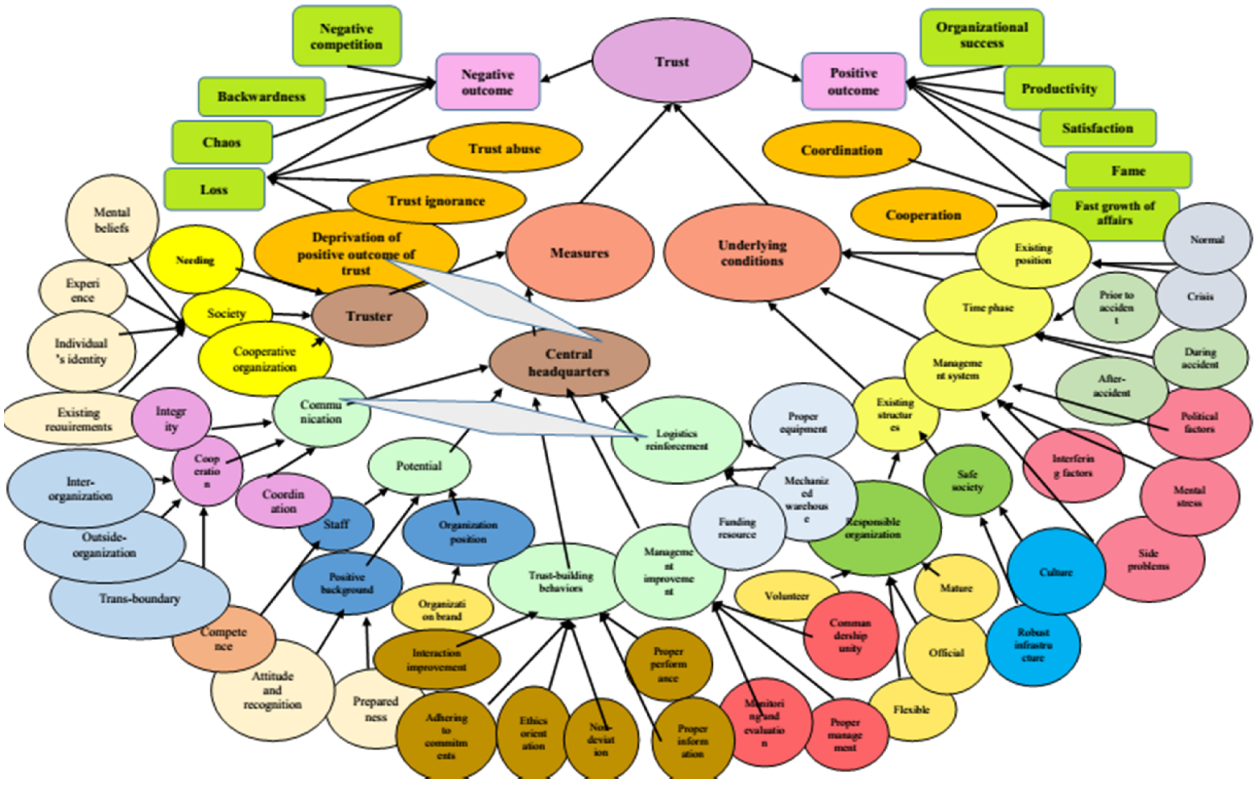



**Figure 4.** Components of the trust building model in the humanitarian network



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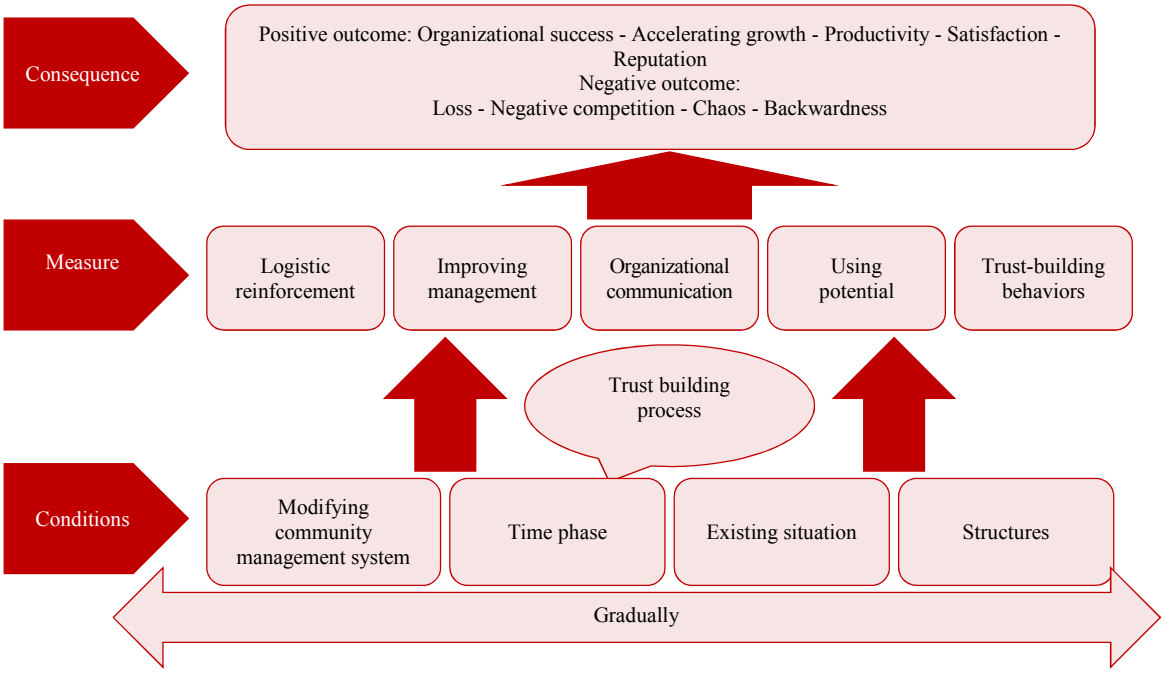



**Figure 5.** Final model of trust building in the humanitarian service network

- The "potential use" factor has a significantly positive effect on "trust".
- The "Improving management" factor has a significantly positive effect on "trust".
- The "communication" factor has a significantly positive effect on "trust".
- The "logistic reinforcement" factor has a significantly positive effect on "trust".
- "Trust" has a significantly positive effect on "positive outcome".

"Trust" has a significantly negative effect on "negative outcome".

Given Table 2, the Cronbach's alpha values of all constructs and composite reliability coefficients (CR) show very good reliability of the measurement models. Moreover, based on the average variance extracted (AVE) values of all the variables in the table, the convergent validity of the measurement models was confirmed and the variables had good internal validity (internal consistency) for measuring the study variables. The results based on the matrix obtained with the Fornell-Larcker index showed that the structures were completely separated, indicating good divergent validity and good fit of the study measurement models.

To investigate the fit of the structural model in a study, the coefficients of $R^2$ are related to the hidden endogenous (dependent) variables of the model, and $R^2$ is a criterion indicating the effect of an exogenous variable on an endogenous variable. Three values of 0.19, 0.33, and 0.67 were considered as the index values for weak, medium, and strong values. The $Q^2$ (Stone-Geisser-Criterion) criterion specifies the predictive power of the model, and if $Q^2$ in the case of an endogenous construct reaches three values of 0.02, 0.15, and 0.35, indicates the weak, medium, and strong predictive power of the exogenous construct or constructs (25). According to Table 3, the $R^2$ value of the constructs indicates the robustness of the structural model fit, and the $Q^2$ value of the endogenous constructs of the trust model and the effect of the exogenous variable on the related endogenous variable indicate the average predictive power of the model. The fitting of the overall model was performed with the goodness of fit (GOF) index and was calculated as 0.574 and with respect to the three values of 0.01, 0.15, 0.35 as respectively weak, medium, and strong values for GOF, the value of 0.574 indicated strong fit to the overall model.

As can be seen in Table 4, all hypotheses of the model were confirmed and it can be concluded that the components of the underlying conditions and the designed model measures have a significantly positive effect on trust, and trust itself has a significantly positive and a negative effect on positive and negative outcomes, respectively.



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**Table 2.** Values of validity and reliability indices of the model structures

| Variable | Cronbach's alpha | Composite reliability | AVE | Variable | Cronbach's alpha | Composite reliability | AVE |
|---|---|---|---|---|---|---|---|
| Normal | 0.759 | 0.843 | 0.532 | Proper performance | 0.884 | 0.946 | 0.530 |
| Crisis | 0.775 | 0.801 | 0.509 | Non-deviation from duty | 0.756 | 0.799 | 0.518 |
| Situation | 0.749 | 0.887 | 0.521 | Adhering to ethics | 0.724 | 0.776 | 0.535 |
| Prior to accident | 0.748 | 0.756 | 0.608 | fulfilling the commitments | 0.789 | 0.889 | 0.581 |
| During accident | 0.853 | 0.888 | 0.540 | Information | 0.799 | 0.891 | 0.516 |
| After the accident | 0.727 | 0.792 | 0.509 | Improved interactions | 0.700 | 0.721 | 0.582 |
| Time phase | 0.765 | 0.852 | 0.553 | Trust building behaviors | 0.738 | 0.898 | 0.544 |
| Strong infrastructure | 0.717 | 0.806 | 0.511 | Positive background | 0.739 | 0.777 | 0.535 |
| Public culture | 0.707 | 0.716 | 0.657 | Position of organization | 0.803 | 0.810 | 0.681 |
| Mature organization | 0.737 | 0.781 | 0.565 | Competence | 0.789 | 0.819 | 0.536 |
| Formal organization | 0.776 | 0.777 | 0.554 | Potential use | 0.707 | 0.819 | 0.584 |
| Flexible organization | 0.733 | 0.776 | 0.550 | Appropriate equipment | 0.712 | 0.720 | 0.563 |
| Voluntary organization | 0.715 | 0.841 | 0.640 | Mechanized warehouse | 0.776 | 0.805 | 0.607 |
| Structures | 0.822 | 0.834 | 0.580 | Fixed fund source | 0.729 | 0.822 | 0.524 |
| Interfering factors | 0.725 | 0.798 | 0.576 | Logistic reinforcement | 0.767 | 0.709 | 0.565 |
| Political factors | 0.758 | 0.762 | 0.651 | Successful organization | 0.875 | 0.922 | 0.501 |
| Mental factors | 0.755 | 0.883 | 0.534 | Accelerated growth of affairs | 0.733 | 0.769 | 0.536 |
| Side problems | 0.729 | 0.747 | 0.583 | Productivity | 0.730 | 0.814 | 0.514 |
| Community management system | 0.713 | 0.863 | 0.586 | Satisfaction | 0.754 | 0.777 | 0.638 |
| External organizational relations | 0.832 | 0.877 | 0.605 | Reputation | 0.711 | 0.761 | 0.515 |
| Inter-organizational relationships | 0.928 | 0.954 | 0.874 | Positive outcome | 0.733 | 0.804 | 0.541 |
| Transboundary relations | 0.722 | 0.843 | 0.642 | Loss | 0.963 | 0.969 | 0.777 |
| Integrity | 0.739 | 0.767 | 0.623 | Negative competition | 0.763 | 0.792 | 0.577 |
| Communication | 0.748 | 0.873 | 0.686 | Backwardness | 0.827 | 0.863 | 0.628 |
| Unit leadership | 0.722 | 0.752 | 0.517 | Chaos | 0.806 | 0.910 | 0.835 |
| Correct management | 0.824 | 0.826 | 0.738 | Negative consequence | 0.851 | 0.772 | 0.704 |

AVE: Average variance extracted

Given confirmation of all the study hypotheses that were designed and analyzed based on the relationships among the model variables, the validity of the final model of trust building in the humanitarian service network is also confirmed.



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**Table 3.** Values of coefficient of determination ($R^2$) and $Q^2$ values of the model endogenous constructs

| Construct | $R^2$ | Effect | $Q^2$ | Effect | Construct | $R^2$ | Effect | $Q^2$ | Effect |
|---|---|---|---|---|---|---|---|---|---|
| Normal | 0.821 | Very strong | 0.397 | Strong | Non-deviation from duty | 0.428 | Moderate | 0.195 | Moderate |
| Crisis | 0.773 | Very strong | 0.333 | Strong | Adhering to ethics | 0.598 | Strong | 0.260 | Strong |
| Prior to accident | 0.643 | Strong | 0.355 | Strong | Fulfilling the commitments | 0.310 | Moderate | 0.099 | Moderate |
| During accident | 0.758 | Very strong | 0.410 | Very strong | Information | 0.789 | Very strong | 0.348 | Strong |
| After the accident | 0.598 | Strong | 0.244 | Moderate | Improved interactions | 0.278 | Moderate | 0.116 | Moderate |
| Strong infrastructure | 0.477 | Moderate | 0.151 | Moderate | Positive background | 0.680 | Strong | 0.219 | Weak |
| Public culture | 0.609 | Strong | 0.256 | Strong | Position of organization | 0.449 | Moderate | 0.269 | Strong |
| Mature organization | 0.142 | Weak | 0.046 | Weak | Competence | 0.679 | Strong | 0.243 | Moderate |
| Formal organization | 0.247 | Weak | 0.115 | Moderate | Appropriate equipment | 0.437 | Moderate | 0.209 | Moderate |
| Flexible organization | 0.619 | Strong | 0.233 | Moderate | Mechanized warehouse | 0.262 | Moderate | 0.165 | Moderate |
| Voluntary organization | 0.732 | Very strong | 0.429 | Very strong | Fixed fund source | 0.675 | Strong | 0.230 | Moderate |
| Interfering factors | 0.719 | Very strong | 0.181 | Moderate | Organizational success | 0.575 | Strong | 0.183 | Moderate |
| Political factors | 0.835 | Very strong | 0.352 | Strong | Accelerated growth of affairs | 0.416 | Moderate | 0.153 | Moderate |
| Mental factors | 0.379 | Moderate | 0.172 | Moderate | Productivity | 0.422 | Moderate | 0.152 | Moderate |
| Side problems | 0.536 | Strong | 0.281 | Strong | Satisfaction | 0.452 | Moderate | 0.239 | Moderate |
| External organizational | 0.878 | Very strong | 0.470 | Very strong | Reputation | 0.399 | Moderate | 0.168 | Moderate |
| Inter-organizational | 0.880 | Very strong | 0.716 | Very strong | Positive outcome | 0.245 | Moderate | 0.040 | Strong |
| Transboundary | 0.090 | Weak | 0.044 | Weak | Loss | 0.947 | Very strong | 0.679 | Very strong |
| Integrity | 0.803 | Very strong | 0.022 | Weak | Negative competition | 0.473 | Moderate | 0.242 | Moderate |
| Unit leadership | 0.671 | Strong | 0.002 | Very weak | Backwardness | 0.378 | Moderate | 0.084 | Moderate |
| Proper management | 0.976 | Very strong | 0.672 | Very strong | Chaos | 0.137 | Weak | 0.099 | Moderate |
| Monitoring and evaluation | 0.855 | Very strong | 0.482 | Very strong | Negative consequence | 0.953 | Very strong | 0.403 | Very strong |
| Proper performance | 0.244 | Weak | 0.055 | Weak | Trust | 0.690 | Strong | 0.149 | Moderate |

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**Table 4.** Results of the study structural model hypotheses

| Hypothesis | Path | Path coefficient | t-value | Result |
|---|---|---|---|---|
| First | Position on trust | 0.337 | 2.531 | Hypothesis confirmed |
| Second | Time phase on trust | 0.612 | 6.106 | Hypothesis confirmed |
| Third | Structures on trust | 0.322 | 2.490 | Hypothesis confirmed |
| Fourth | Community management system on trust | 0.605 | 4.625 | Hypothesis confirmed |
| Fifth | Trust building behaviors on trust | 0.619 | 7.740 | Hypothesis confirmed |
| Sixth | Potential use on trust | 0.491 | 2.667 | Hypothesis confirmed |
| Seventh | Management improvement on trust | 0.752 | 16.531 | Hypothesis confirmed |
| Eighth | Communication on trust | 0.634 | 7.318 | Hypothesis confirmed |
| Ninth | Logistic reinforcement on trust | 0.504 | 5.861 | Hypothesis confirmed |
| Tenth | Trust on positive outcome | 0.495 | 2.482 | Hypothesis confirmed |
| Eleventh | Trust on negative outcome | -0.976 | 80.685 | Hypothesis confirmed |

## Conclusion

The concept of trust in the humanitarian supply chain is a little different from the concept of trust in general. Because of the difference in the formation of trust in the critical situation and the incident from the normal situation, the circumstances governing it, and the intensity of the need, the emotional and mental involvement drives attention towards actions that are more tangible to understanding. Trust gives the community a spirit of joy and comfort.

The findings in the study by Hossain and Ouzrout including honesty, transparency, validity (adherence of suppliers to commitments), experience (awareness of appropriate actions and knowledge required), competence, effective communication skills, and shared values, considered commitment as one of the trust criteria in the supply chain, which is similar to the present study in terms of honesty, transparency, fulfilling commitments in trust building behaviors as well as organizational communication in the area of measures and competencies, experience, and skills of employees and managers, and also cultural values in the area of the underlying conditions of the study model (26).

Halil et al. described the competence, replication, and effectiveness of communications, value, and culture as characteristics of trust among members of the supply chain of industrial building systems, which are consistent with proper and successful performance, organizational communication in the measures section, and general culture from the underlying conditions of the present study, and was different from the results of the present study in other issues such as financial stability, long-term relationships, alignment of effort, and reward in accordance with the study population (27).

The results of the study by Tejpal et al. were prerequisites for trust in the supply chain including honesty and integrity, standards of work, kind and friendly relationships, shared values, experiences and expertise, timeliness, and reliability, which is similar to the present study in terms of ethics, competence, and proper and successful performance of trust building behaviors (28).

Delbufalo classified the outputs of trust in the supply chain as direct economic outputs (effectiveness and productivity, cost reductions, time cycle reduction, task performance), indirect outputs (collaboration, joint actions), and relational outputs (effective commitment, continuity, shared responsibility, solidarity and bilateral relationships, satisfaction); this is consistent with the outcomes of the present study and is different in other respects (29).

The results of the study by Wu et al. showed that shared values and communication have a positive impact on trust and the opportunistic behavior of members has a negative effect on trust in the supply chain, and that trust leads to reduced uncertainty and increased collaboration; this is consistent with the findings of the present study (30).

Relying on humanitarian assistance in Iran's humanitarian supply chain is one of the major problems and obstacles to building trust. Uncertainty, lack of proper planning, lack of urgent and vital needs, severe waste of resources, cost overruns, delays in distributing items and facilities to the victims, especially corruption and embezzlement in this regard, and breach of trust due to the lack of proper control and accurate

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oversight are the most important reasons for the distrust of the society in the responsible organizations in this chain.

The chaos and turmoil of the earthquake disaster in Kermanshah and the floods of Nowruz days in most cities in the country confirmed this claim. This has been resulted from the lack of sufficient budget allocation and the irresponsibility of the top executives in the national arena and has damaged the national reputation due to lack of trust. However, the developed countries of the world lack such a problem, and the governments with prior planning, budget allocation, and full organization are in charge of providing the necessary facilities and equipment in the three phases of the accident.

Based on the results of the study, a set of important factors together yield a successful and satisfying performance and form the basis of trust that ultimately leads to excellent and effective performance. The steps required in this process include proper management, positive and constructive bilateral communication, trust building behaviors, utilizing potential and existing talent, and having strong support through logistical reinforcement in the humanitarian supply chain. The national will and diligence of the officials responsible for the implementation of the above measures can restore lost trust and lead to national convergence and integrity, building trust, and strengthening the community with positive consequences of trust.

The dominance of the political elements in the relief network has been a major factor in blocking access to the information needed and the lack of proper co-operation of the informed individuals. Avoidance and refusal to provide information and fear of loss of position have made it difficult for researchers to access unknown factors and to find practical solutions in this field. Lack of independence and delegated authority in the field of practice has actually reduced the efficiency of operations and depletes little trust and respect among the factors, and similar incidents and successful and satisfying operations in the relief service chain should not be expected to decline until law and order and growth and practice govern these conditions in accordance with the scientific principles.

***Managerial and practical suggestions:*** Trust is considered to be a key prerequisite in the humanitarian service network, and trust building has prerequisites and conditions the lack of realization of which will not only impede trust but also create mistrust. The leaders and senior executives of the humanitarian service networking organizations should, first, emphasize inter-organizational trust and be supporting and pursuing the development of trust in the organization under their management.

Collaboration at the three intra- and inter-organizational and transboundary levels makes it possible to achieve positive outcomes of trust and is the foundation and support for the development and growth of things. This issue is suggested to be operationalized and supported by the senior managers of the organizations, as the results of the study show that these three levels are interdependent and that the deficiency at each level affects the other level.

Another key element of the trust model is to modify the community management system. Modifying any matter will be useful and effective when one addresses the root causes of defects and deficiencies, which is followed by the improvement and growth of matters. This is primarily a matter of the government at the macro level, and requires their determination and long-term strategies and modify policies.

Logistics reinforcement in the humanitarian supply chain is the driver of rapid and timely relief. It is recommended that all organizations and individuals involved in the network shift their perspective and vision from relying on public assistance in times of disasters and emergencies (except in exceptional and obligatory cases) to relying on structured logistics.

It is recommended that joint maneuvers and workshops be held to deal with a variety of possible events to increase the preparedness of the organizations present in the event. Collective visits and friendly relationships between partner organizations to further understand the tasks of each other and empathy should also be on the agenda.

Finally, a coordination unit and communication with the other fourteen crisis management working groups should be formed and more voluntary cooperation should be provided through appropriate welcoming, training, delegation of authority, and appreciation and encouragement of active and highly experienced volunteers.



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## Conflict of Interests

Authors have no conflict of interests.

## References

1. Mentzer JT, Dewitt W, Keebler JS, Min S, Nix NW, Smith CD, et al. Defining supply chain management. J Bus Logist 2001; 22(2): 1-25.
2. Barratt M. Understanding the meaning of collaboration in the supply chain. Supply Chain Manage 2004; 9(1): 30-42.
3. Skjott-Larsen T, Thernoe C, Andresen C. Supply chain collaboration: Theoretical perspectives and empirical evidence. International Journal of Physical Distribution & Logistics Management 2003; 33(6): 531-49.
4. Fawcett S, Magnan G, McCarter M. Benefits, barriers, and bridges to effective supply chain management. Supply Chain Manage 2008; 13(1): 35-48.
5. Van Wassenhove LN. Blackett memorial lecture humanitarian aid logistics: Supply chain management in high gear. J Oper Res Soc 2006; 57(5): 475-90.
6. Tatham P, Kovacs G. The application of "swift trust" to humanitarian logistics. Int J Prod Econ 2010; 126(1): 35-45.
7. Maguire S, Hardy C. Identity and collaborative strategy in the Canadian HIV/AIDS treatment domain. Strateg Organ 2005; 3(1): 11-45.
8. Jafarnejad A, Hashemi S, Talaie HR. New approaches In Supply Chain Management: Sustainable, Resilient, Humanitarian, and Service. Tehran, Iran: Negahe Danesh Publications; 2014. [In Persian].
9. Balcik B, Beamon BM, Krejci CC, Muramatsu KM, Ramirez M. Coordination in humanitarian relief chains: Practices, challenges and opportunities. Int J Prod Econ 2010; 126(1): 22-34.
10. Andert D, Wakefield R, Weise J. Trust modeling for security architecture development. Santa Clara, CA: Sun Microsystems, Inc.; 2002.
11. Ring PS, van de Ven AH. Developmental processes of cooperative interorganizational relationships. Acad Manage Rev 1994; 19(1): 90-118.
12. Castellini A, Disegna M, Mauracher C, Procidano I. Consumers' Willingness to Pay for Quality and Safety in Clams. Journal of International Food & Agribusiness Marketing 2014; 26(3): 189-208.
13. Hsu CL, Chen MC. Explaining consumer attitudes and purchase intentions toward organic food: Contributions from regulatory fit and consumer characteristics. Food Qual Prefer 2014; 35: 6-13.
14. Ariyawardana A, Ganegodage K, Mortlock MY. Consumers' trust in vegetable supply chain members and their behavioral responses: A study based in Queensland, Australia. Food Control 2017; 73: 193-201.
15. Corbin J, Strauss AL, Strauss A. Basics of qualitative research. Thousand Oaks, CA: SAGE; 2015.
16. Paparoidamis NG, Katsikeas CS, Chumpitaz R. The role of supplier performance in building customer trust and loyalty: A cross-country examination. Industrial Marketing Management 2019; 78: 183-97.
17. Holtgrave M, Nienaber AM, Ferreira C. Untangling the trust-control nexus in international buyer-supplier exchange relationships: An investigation of the changing world regarding relationship length. Eur Manag J 2017; 35(4): 523-37.
18. Ojha D, Shockley J, Acharya C. Supply chain organizational infrastructure for promoting entrepreneurial emphasis and innovativeness: The role of trust and learning. Int J Prod Econ 2016; 179: 212-27.
19. De Almeida MN, Silva Marins FA, Pedro Salgado AM, Almada Santos FC, da Silva SL. Mitigation of the bullwhip effect considering trust and collaboration in supply chain management: a literature review. Int J Adv Manuf Technol 2015; 77(1-4): 495-513.
20. Wang Q, Craighead CW, Li JJ. Justice served: Mitigating damaged trust stemming from supply chain disruptions. J Oper Manag 2014; 32(6): 374-86.
21. Nyaga GN, Whipple JM, Lynch DF. Examining supply chain relationships: Do buyer and supplier perspectives on collaborative relationships differ? J Oper Manag 2010; 28(2): 101-14.
22. Hua S, Ranjan Chatterjee S, Kang-kang Y. Access flexibility, trust and performance in achieving competitiveness. Journal of Chinese Economic and Foreign Trade Studies 2009; 2(1): 31-46.
23. Cheng J, Yeh C, Tu C. Trust and knowledge sharing in green supply chains. Supply Chain Manag 2008; 13(4): 283-95.
24. Lin F, Sung YW, Lo YP. Effects of trust mechanisms on supply-chain performance: A multi-agent simulation study. Int J Electron Comm 2005; 9(4): 9-112.
25. Davari A, Rezazadeh A. Structural equation modeling with PLS. Tehran, Iran: Iranian Student Book Agency; 2014. [In Persian].
26. Hossain SA, Ouzrout Y. Trust model simulation for supply chain management. Proceedings of the 15th International Conference on Computer and Information Technology (ICCIT); 2012 Dec. 22-24; Chittagong, Bangladesh.
27. Halil FM, Mohammed MF, Mahbub R, Shukur AS. Trust attributes to supply chain partnering in

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[ DOI: 10.52547/jorar.11.1.49 ]



http://jorar.ir

industrialized building system. Procedia Soc Behav Sci 2016; 222: 46-55.
**28.** Tejpal G, Garg R, Sachdeva A. Trust among supply chain partners: A review. Meas Bus Excell 2013; 17(1): 51-71.
**29.** Delbufalo E. Outcomes of inter? Organizational trust in supply chain relationships: A systematic literature review and a Meta? Analysis of the empirical evidence. Supply Chain Manag 2012; 17(4): 377-402.
**30.** Wu J, Dai L, Chiclana F, Fujita H, Herrera-Viedma E. A minimum adjustment cost feedback mechanism based consensus model for group decision making under social network with distributed linguistic trust. Inf Fusion 2018; 41: 232-42.

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