Effects of Organizational Trust on Organizational Learning and Creativity

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ABSTRACT

In the knowledge economy era, the competitive advantage of an enterprise is established on intangible resources and capability. Trust allows individuals acquiring and exchanging intellectual capitals, especially in ambiguous and uncertain situations, and knowledge exchange relies on the existence of trust. Different from past other industries, high-tech industry stresses on intangible assets, endeavors to transform real assets into valuable knowledge, and manage and create "intellectual property" based on value for specific operating performance of an enterprise. This study therefore discusses the effect of organizational trust on organizational learning and creativity in high-tech industry. Aiming at Mawei Hi-Tech Park in Fujian Province, 500 supervisors and employees are distributed the questionnaire and 373 valid copies are retrieved, with the retrieval rate 75%. The research results show 1. positive and significant effects of organizational trust on organizational learning, 2. positive and remarkable effects of organizational learning on creativity, and 3. positive effects of organizational trust on creativity. It is expected to propose suggestions, based on the results, for the promotion of intellectual capitals in high-tech industry.

Keywords: high-tech, organizational trust, organizational learning, creativity, intellectual capital

INTRODUCTION

Following the approach of new economy era, knowledge presents critical status, knowledge possessed by an organization is the only source of the competitive advantage in the future, and organizations could more rapidly possess learning capability than other competitors do. Trust allows individuals acquiring and exchanging intellectual capitals, especially in ambiguous and uncertain situations, and knowledge exchange depends on the existence of trust. The development of high-tech industry is often regarded as the economic indicator of a country moving towards a developed country and the key motivation to promote the future economic development of a country. Different from past other industries,
hi-tech industry focuses on intangible assets, endeavors to transform real assets into valuable knowledge, and manage and create “intellectual property” based on value for the specific operating performance of an enterprise. Intangible assets are gradually emphasized in the new economy era that it becomes a primary issue to discuss intangible assets in hi-tech industry. From the aspect of trust, humans, being social animals, learn to interact from childhood, and trust is necessary for the uncertainty in the interaction process. However, it is found in the society in Taiwan before the 21st century that trust loss, loyalty disappearance, and value collapse appear in both public domain and private domain (Zhao et al., 2012). The relationship and trust between individuals and the government, enterprises, spouses, children, or friends might collapse at any time; they even betray the other parties to acquire the due benefits, but end the relationship. Simply speaking, the society is full of distrust, including the interaction among organizational members, so that people seem to wear masks and do personal tasks and the working environment becomes indifferent. In an organization, partnership appears among people, and the success of partnership depends on the degree of trust and being trusted. Creativity is a key factor in the innovation and success of an organization. In other words, creativity is the motivation to invent new ideas and new concepts, and any organizations could rely on it to move towards success. Creativity has currently become an essential ability for individuals. Although some people consider creativity being innate, many experiments prove that creativity could be induced by learning. Creativity exists everywhere in our life; inserting different learning allows various ideas being extended from distinct thoughts. Certainly, cultivation through nurture and other factors could result in different effects. For this reason, this study intends to discuss the effect of organizational trust on organizational learning and creativity in hi-tech industry. It is expected that the proposed suggestions, based on the research results, could help hi-tech industry enhance intellectual capitals.

State of the literature

- Trust allows individuals acquiring and exchanging intellectual capitals, especially in ambiguous and uncertain situations, and knowledge exchange relies on the existence of trust.
- Creativity has currently become an essential ability for individuals. Although some people consider creativity being innate, many experiments prove that creativity could be induced by learning.
- To discuss the effect of organizational trust on organizational learning and creativity.

Contribution of this paper to the literature

- The employees generate trust in the organization and are willing to stay in hi-tech industry and present better performance.
- The employees could exchange opinions and experiences and build good knowledge sharing environments and learning atmosphere under mutual trust.
- Employees are encouraged to interact with creativity, instead of small groups to stimulate the creativity of both employees and the organization.
LITERATURE REVIEW AND HYPOTHESIS

Organizational Trust

Organizational trust presents the importance on both individuals and groups in the operation of an organization. To discuss the formation and development of organizational trust, researchers proposed multiple meanings and dimensions from different aspects. Anderson et al. (2012) organized organizational trust into five dimensions. (1) Organizational trust was regarded as individual psychological state. (2) Organizational trust was regarded as perceived experiences. (3) Organizational trust was referred to the positive expectation and confidence in the properties of another party. (4) Organizational trust was the intention to actively undertake risks. (5) Organizational trust would change with overall situations. Cerne et al. (2014) divided organizational trust in schools into (1) individual trust, which could be affected by the development experiences, type of personality, and cultural background of individuals, (2) interpersonal trust, which stressed on trust generated from human interaction and depended on personal characteristics being dependable, (3) competence trust, referring to organizational members being able to perform appropriate behaviors expected by the organization, and (4) institutional trust, emphasizing the overall trust of organizational members (e.g. staff, directors, and principals in schools) in the organization (Narang Leenu & Lakhwinder, 2011). Trust among people is regarded as interpersonal trust, which is divided into trust among colleagues, in supervisors, and in the entire organization. Cognition-based trust and affect-based trust are the major factors in interpersonal trust. The dimensions and definitions are described as below (Aburoub et al., 2011).

1. Cognition-based trust: Cognition-based trust refers to the intention to trust the other party after understanding the evidence of the person being trustable. Such evidence contains personality, background, intention, capability, and deeds according to words. The process to consider such evidence is a cognitive process that trust generated through such a process is called cognition-based trust (Zhao et al., 2012).

2. Affect-based trust: Affect-based trust refers to being willing to trust a person based on the emotional attachment to the person. Emotional exchange in interpersonal trust would deepen the trust between both parties, but such trust is developed by getting along and bonding with each other that it would not appear in the beginning of interpersonal relationship. When thoroughly understanding the goodwill, reliability, and dependability of the other party in the continuous cooperation, certain dependence would be gradually generated. Such dependence is interactive; that is, one-sided trust would challenge the flexibility of trust (Lee et al., 2013).

Organizational Learning

Organizational learning is an idea constructed by the integration of psychology, organizational development, management science, sociology, organizational theory, strategic
production, and human culture, a process of adaptation and evolution, and the action with dynamic cycles (Beitelspacher et al., 2011; Wu & Tai, 2016). Connelly et al. (2012) pointed out organizational learning as the process of an organization proceeding structure reconstruction when being affected by external technologies and political environments. Abzari et al. (2011) mentioned that organizational learning could be regarded as an organizational learning system. An organization, through the establishment of structure and systems and the interaction between manager behaviors and members, had organizational members and teams and the organization share the combination of technologies and experiences, precede knowledge management, and improve mental model and teamwork through adaptation and innovation learning to achieve the vision. Ford et al. (2011) indicated that organizational learning had an organization flexibly distribute and effectively apply resources by enhance the overall learning capability to develop the leverage effect of existing practice capability and create new practice capability to cope with internal and external challenges at any time. Referring to Cheng et al. (2013), exploration and exploitation are used as the dimensions of organizational learning in this study.

1. Exploitation learning behaviors are defined as refinement, routine, repetition, fine tuning, revision, and maturity.
2. Exploration learning behaviors are defined as experiment, novelty, adventure, attempt, and innovation.

Exploration or exploitation of formative experience learning is deducted indirectly through relevant theoretical behaviors. Most researchers regarded exploitation learning as existing resources and elements in an organization being reinforced and improved, which could be better accepted by the members because of the transparent and progressive change. Exploration learning presents innovative, adventurous, unknown, changing, and experimental uncertainties, which could easily result in hesitation and resistance of the members. An organization flexibly using and transforming exploration learning and exploitation learning could adjust the constitution and add new blood in the organization, allow the members learning new knowledge from reviewing old one, and establish good learning attitudes to rapidly cope with the changeable external environment.

Creativity

Creativity has been emphasized and discussed in various fields since Bhatti et al. (2011) promoted divergent thinking in American Psychological Association. A lot of domestic and international researchers also invested in the research on creativity to discuss the nature of humans. DeConinck (2011) indicated that creativity involved in activities planned and structured by individuals, such as painting, writing, performance, design, and invention. Abzari & Ghujali (2011) mentioned that creativity, as potential, contained a prompt idea, a sustainable and divergent thinking process, or the expression of a novel and creative product or art. Frenkel et al. (2012) regarded creativity as the ability or the extension of creative personality, with which a person could apply the existing knowledge or experiences,
through self-thinking process, to appear new ideas or unique products on objects to eventually be affirmed and identified by others. Hanson (2013) pointed out creativity as creative behaviors or results generated under past experiences, intelligence accumulated by knowledge, personal thinking styles, and effects of motivation and environments. Constant innovation is necessary for an organization maintaining the sustainable competitive advantage, and employee creativity is the beginning of innovation. To achieve organizational creativity and enhance organizational innovation, an individual or an organization has to induce creativity through personal effort or systematic mechanisms of the organization. Referring to Chiang & Hsieh (2012), individual creativity and organizational creativity are classified as the dimensions of creativity, which are defined as following.

1. Individual creativity: Members are the start of organizational innovation that individual creativity needs to be induced in order to achieve organizational innovation performance.
2. Organizational creativity: In order to maintain competitive advantage, an organization enhances organizational creativity, through member effort or organizational systems, to maintain the fighting strength.

**Correlations between Organizational Trust and Organizational Learning**

An excellent enterprise in the future is an organization constantly trying to involve in the personnel at different levels and being capable of constant learning (Somerville & Farner, 2012; Greenberg, 2013). Organizational learning refers to an organization, in the existing and struggling environment, establishing internal and external knowledge and possessing adequate action for good management strategies. There has not been the research directly discussing the correlations between organizational trust and organizational learning. However, Senge mentioned, in Necessary Revolution, that organization leaders should try to transfer the general habit of “avoiding bad things” to starting to do positive and encouraging things; trust would result in more trust, as more difficult revolution required more mature cooperation, and trust was the key in the relationship (Andrus, 2010; Lee et al., 2013). Han et al. (2011) argued that the members in a learning organization presented being highly trusted and learned actively, while control was the management in traditional organizations that low trust appeared among people, who learned everything passively or accept arrangement because of fear and being negative. When obstacles appear on trust in an organization, a gap which could hardly be crossed would exist in the organizational learning, and the employees or departments, with low trust, would wear masks and lost energy. Discussing learning in such an organization would be in vein, and the organization leaders would be helpless and powerless on the promotion. It is therefore assumed in this study that

H1: Organizational trust shows positive and significant effects on organizational learning.
Correlations between Organizational Learning and Creativity

Jeung (2011) indicated that developing creativity in the organizational learning process could enhance the action efficiency of the organization and individuals. Li et al. (2012) regarded the close relationship between knowledge and organizational innovation in the organizational learning process. Fu et al. (2011) also pointed out the correlations between organizational learning and innovation. Santora (2013) considered that learning could enhance innovation capability in a learning organization. Accordingly, when innovation is regarded as the process of knowledge production, knowledge utilization, and knowledge diffusion, creativity would be the flame of innovation. Karatepe et al. (2012) concluded that 1. learning mechanism offered by an organization presented explanatory power on the promotion of employee creativity and 2. the property of organizational learning subject also showed explanatory power on employee creativity. In other words, an organization could enhance creativity by planning multiple, active, dynamic, and static organizational learning activities and offering relevant cultivation programs and plans. The following hypothesis is therefore proposed in this study.

H2: Organizational learning reveals positive and remarkable effects on creativity.

Correlations between Organizational Trust and Creativity

Guchait et al. (2012) proposed that employees should be trusted and perceive trust so as to support the activeness, as employees were aware of being trusted and trusted the organization (e.g. leaders, managers) to minimize risks, and trust was an important dimension to measure organizational creativity (Narang Leenu & Lakhwinder, 2011). Weng et al. (2010) indicated that trust in environment was the primary encouragement of innovation climate and could be developed by the relationship between supervisors and subordinates. Kale & De (2013) mentioned that the fairness and objectiveness of an organization would affect the trust of the members; in other words, an organization could more easily be trusted by the employees who perceive good treatment and fairness from the organization; especially, employees would be more willing to present job performance beneficial to the organization after trust was established between labor and management. Yuan & Lee (2011) revealed that the members could perceive other colleagues stressing on their involvement and contribution to the organization, concerning about them, and supporting them and perceive the degree of others’ emphasis and support that the members might transform organizational support to organizational attachment and loyalty. It is therefore assumed in this study that

H3: Organizational trust presents positive effects on creativity.
METHODOLOGY

Sample and Measurement Indicator

Research sample and subject

Mawei Hi-Tech Park in Fujian Province, founded in 1988, has followed international practice for the construction and operation, introduced technology venture capital, supported technology start-up, and created favorable environments for transforming hi-tech outcomes to industrialization, aiming to enhance hi-tech development. Being led by hi-tech industries, it focuses on advanced technologies of electronics and information, semiconductor, computer software/hardware, biomedicine, light industry electromechanics, and metallurgical machinery. “New China Science Park” and “National 863 Project R&D Transformation Base” in the park are ready to go so that the hi-tech park has become a base with the most concentrated, the densest, and the largest electronic industries in Fujian Province. Aiming at Mawei Hi-Tech Park in Fujian Province, supervisors and employees in the enterprises in Mawei Hi-Tech Park are distributed 500 copies of questionnaire. Total 373 valid copies are retrieved, with the retrieval rate 75%.

Reliability and validity test

Validity refers to the measurement tool being able to really measure the questions which a researcher desires to measure. Validity is generally divided into content validity, criterion-related validity, and construct validity. Since the questions in this study are referred to those made by domestic and international researchers, and a pretest is preceded after discussing with professors, the formal questionnaire presents certain content validity. Organizational trust, organizational learning, and creativity are tested the overall structure causality with Linear Structural Relation Model in this study, and the data input is based on the correlation matrix of above variables. The analysis with Linear Structural Relation Model reveals the overall model fit reaching the rational range that it presents favorable convergent validity and predictive validity. Referring to Kerlinger’s (1986) suggestion, item-to-total correlation coefficients are used for testing the construct validity of the questionnaire in this study. That is, the item-to-total correlations of the dimensions in this study are higher than 0.7 that the questionnaire shows certain construct validity.

Reliability Analysis and Validity Analysis are further proceeded to understand the reliability and validity of the questionnaire. According to the viewpoint of Cuieford (1965), the higher Cronbach’s α reveals the better reliability. The formal questionnaire in this study is developed based on the standards, and the Cronbach’s α reliability coefficients appear in 0.71~0.86 that it apparently achieves the reliability range. The data in this study are organized in Table 1. The preliminary fit criteria, fit of internal structure, and overall model fit are explained as following.
RESULT

Evaluation Indicator of LISREL Model

LISREL model (linear structural relation), combining Factor Analysis and Path Analysis in traditional statistics and including simultaneous equations in econometrics, is a research tool which could simultaneously calculate multiple factors and multiple casual paths. Bagozzi (1998) suggested evaluating goodness-of-fit of model with preliminary fit criteria, overall model fit, and fit of internal structure of model.

From the entire model analysis in Table 1, the two dimensions (cognition-based trust and affect-based trust) in organizational trust to organizational trust, the two dimensions (exploration and exploitation) in organizational learning to organizational learning, and the two dimensions (individual creativity and organizational creativity) in creativity to creativity achieve the significance (t>1.96, p<0.05; t>1.96, p<0.05; t>1.96, p<0.05, respectively). Apparently, the overall model presents good preliminary fit criteria.

In regard to fit of internal structure, organizational trust shows positive and remarkable correlations with organizational learning (0.893, p <0.01), organizational learning reveals positive and notable correlations with creativity (0.875, p <0.01), and organizational trust appears positive and significant correlations with creativity (0.866, p <0.01) that H1, H2, and H3 are supported.

Regarding overall model fit, the overall model fit standards $\chi^2$/Df is 1.523, smaller than the standard 3, and RMR appears 0.006, showing the proper $\chi^2$/Df and RMR results. Besides, chi-square value is sensitive to sample size that it is not suitable for direct judgment. However, the overall model fit standards GFI 0.979 and AGFI 0.936 are higher than the standard 0.9 (the closer GFI and AGFI to 1, the better model fit) that this model presents favorable goodness-of-fit indicators.
The conclusion reveals the importance to establish and maintain organizational trust. An instruction in a hi-tech organization is connected hierarchically, but not all employees would completely understand the task content and the objective and idea when receiving the document or announcement. In such ambiguous working environment, members can easily appear discomfort and distrust. In this case, the communication between administrative supervisors and employees becomes critical. A great team does not succeed in the beginning but forms the strong common learning organization by members sharing knowledge and learning. As a result, promoting and enhancing member intention to share knowledge and forming a nature learning relationship between individuals and a hi-tech organization are a way for hi-tech industry presenting competitive advantage and the employees making common efforts. Accordingly, employees, when encountering problems, should discuss with the supervisors for solutions, rather than purely listen to instructions. Everyone presents the traits to develop personal creativity. Having employees share, help, and learn from each other could break down the wall in between.

**Table 1.** Analysis of overall Linear Structural Relation model

<table>
<thead>
<tr>
<th>Evaluation item</th>
<th>Parameter/evaluation criterion</th>
<th>Result</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational trust</td>
<td>Cognition-based trust</td>
<td>0.833</td>
<td>12.33**</td>
</tr>
<tr>
<td></td>
<td>Affect-based trust</td>
<td>0.825</td>
<td>11.45**</td>
</tr>
<tr>
<td>Organizational learning</td>
<td>Exploration</td>
<td>0.793</td>
<td>8.76**</td>
</tr>
<tr>
<td></td>
<td>Exploitation</td>
<td>0.804</td>
<td>9.48**</td>
</tr>
<tr>
<td>Creativity</td>
<td>Individual creativity</td>
<td>0.857</td>
<td>17.36**</td>
</tr>
<tr>
<td></td>
<td>Organizational creativity</td>
<td>0.841</td>
<td>16.51**</td>
</tr>
</tbody>
</table>

**Fit of internal structure**

|                      | Organizational trust → organizational learning | 0.893  | 28.14** |
|                      | Organizational learning → creativity          | 0.875  | 26.32** |
|                      | Organizational trust → creativity              | 0.866  | 25.73** |

**Overall model fit**

<table>
<thead>
<tr>
<th></th>
<th>X2/Df</th>
<th>GFI</th>
<th>AGFI</th>
<th>RMR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.523</td>
<td>0.979</td>
<td>0.936</td>
<td>0.006</td>
</tr>
</tbody>
</table>

**Note:** * stands for p<0.05, ** for p<0.01, and *** for p<0.001.

**Table 2.** Hypothesis test

<table>
<thead>
<tr>
<th>Research hypothesis</th>
<th>Correlation</th>
<th>Empirical result</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>+</td>
<td>0.893</td>
<td>P&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>+</td>
<td>0.875</td>
<td>P&lt;0.01</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>+</td>
<td>0.866</td>
<td>P&lt;0.01</td>
<td>Supported</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The conclusion reveals the importance to establish and maintain organizational trust. An instruction in a hi-tech organization is connected hierarchically, but not all employees would completely understand the task content and the objective and idea when receiving the document or announcement. In such ambiguous working environment, members can easily appear discomfort and distrust. In this case, the communication between administrative supervisors and employees becomes critical. A great team does not succeed in the beginning but forms the strong common learning organization by members sharing knowledge and learning. As a result, promoting and enhancing member intention to share knowledge and forming a nature learning relationship between individuals and a hi-tech organization are a way for hi-tech industry presenting competitive advantage and the employees making common efforts. Accordingly, employees, when encountering problems, should discuss with the supervisors for solutions, rather than purely listen to instructions. Everyone presents the traits to develop personal creativity. Having employees share, help, and learn from each other could break down the wall in between.
CONCLUSION

Although there are few studies directly discussing the correlations between organizational trust and organizational learning, the research results prove that trust would result in more trust, and high organizational trust atmosphere could enhance organizational learning. In a hi-tech organization, employees realizing more evidence of trust among colleagues would present higher trust that they are more willing to perform behaviors beneficial to the organization and enhance organizational creativity. Currently, most domestic research focuses on organizational learning and organizational innovation performance to find out the factors in employee creativity in the organizational learning process and the promotion of creativity when organizational learning is planned in an organization. This study proves that employees in hi-tech industry stressing more on organizational learning would perform more creativity, i.e. to develop creativity in the organizational learning process and to enhance the action efficiency of the organization and individuals.

RECOMMENDATIONS

According to the results and findings, practical suggestions are proposed as below.

1. Hi-tech industry is suggested to create supportive working environments and hold physical and mental health activities and various educational trainings so that the employees generate trust in the organization and are willing to stay in hi-tech industry and present better performance.

2. Work observation between departments for mutual learning, improvement, and new vision is suggested in this study. In addition to formal channels, sharing and learning could be proceeded through leaders in informal situations and information organizations so that the employees could exchange opinions and experiences and build good knowledge sharing environments and learning atmosphere under mutual trust.

Hi-tech industry is suggested to denote to the cultivation of employees’ professional knowledge so as to present organizational learning capability, creativity, and independent thinking capability. Besides, creativity related activities could be held, and employees’ understanding of such activities need to be confirmed; employees are encouraged to interact with creativity, instead of small groups to stimulate the creativity of both employees and the organization.

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