Studying the impact of integrity on organizational agility components

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Abstract
The main purpose of this research is to study the impact of integrity on organizational agility components. For this, 84 employees of Fars Research Science University were selected through random sampling in a quantitative study. Data collection tool was an integration measurement questionnaire by Cotlin and Ablino and standard agility questionnaire by Sharifi and Zhang. Collected data is analyzed by Warp PLS software package and structural equation modeling. The findings indicate that integration impacts on four agility components including quickness, competency, responsiveness, and flexibility.

Keywords: agility, integrity, quickness, competency, responsiveness, flexibility

Introduction
Perhaps, quickness is the most important wealth in the third millennium and new age as information age. To mitigate the time of responding and flexibility improvement, new forms of organizations should be emerged. Agile company is a concept to respond changes, uncertainty and unpredictability in business environment properly. To confront such problems in this century, agile companies need four elements: responsiveness, competency, flexibility and quickness (Sharp et al, 1999; Yusuf et al, 1999). Agility refers to organizational ability in feeling, understanding and predicting current changes in business environment. Such organization can recognize environmental changes and to look at them as the factor of growth and blossom (Swafford et al, 2006).

The first integrity system was born in World War II (Bittichi, 2006). During the war, scientists developed a structured methodology in order to conduct R&D activities and to resolve complicated physical and organizational problems. Today, it is seen as integrity system. According to Mische, system integrity involves all organizational processes, managerial tasks, organizational interaction, structural unities and knowledge management (Sanajian, 2004).

To respond changes and uncertainties in business environment properly, agile companies need distinguishable capabilities and consistency to confront concerns. Along with such spatial uncertainty, they need organization-wide integrity in order to
achieve agility and to use their capabilities to be pioneers in business. Does integrity play the role of agility precedent in practice?

**Literature review**

**Agility**

Agility history backs to US industrial depression. In 1990, US Congress decided to take measures in this regard. As the result, it ordered Defense Department to establish an agency to study US manufacturing industry in order to make it more competitiveness (Lahafi, 2011). Therefore, for the first time, a new paradigm was reported by ACUCA Institute as “the strategy of manufacturing companies in 21st century: the views of industrial specialists”.

Agile manufacturing term was jointly used by the publication of “the strategy of manufacturing companies in 21st century” (Kidd, 1994). To establish a global market, we need agility, time, resources and the capacity to change the company in an on-time, online and flexible manner (Seethamraju & Sundar, 2013). Agility includes conducting new activities without prior planning in response to changes in market demand and customer’s unpredicted request (Narasimhan et al, 2006). Agility consists of four aspects: competitive costs, quality, trustworthiness and flexibility and organizational movement to respond unexpected changes in the market and business environment rapidly (Barbara et al, 2012).

There are various definition on agility but no one is in contrary to other ones and they do not negate each other. Generally, such definitions indicate the idea of quickness and change in business environment.

Kidd (1994) has proved one of the most comprehensive definitions on organizational agility: “agile organization is a quick, adapted and aware business with capability of rapid compatibility in responding unpredicted and unexpected events, market opportunities and customers’ needs. In such business, one can find processes and structures that facilitate quickness, adaptability and strength and have proper discipline to achieve competitive performance in a full dynamic and unanticipated commercial ambience (Kidd, 1994), Sharifi and Zhang (2000) have defined agility as confrontation with unpredicted changes to survive against external threats and exploiting the change as an opportunity.

Tsourveloudis et al (2003) believe that company’s elements are goals, purposes, technology and organization and they fifer agility from flexibility. They believe that flexibility is the ability of total factory in changing due to one job or production route while agility is strategic capability of total company in adapting to uncertainty and sudden changes in the market. Agility is a concept different from flexibility while flexibility is a key feature of agility (Christopher, 2000) and both concepts point out the change (Swafford et la, 2006).

According to the conducted study, one can say that the aim of agile development planning is to unite the resources of investment to generate value in business
Integrity includes the requirements an organization should consider on its operations. Such requirements may be seen contradictory and one cannot meet simultaneously. Integrity refers to modus operandi, joint ways and behaviors by which information is exchanged among different sections (Barbara et al, 2012). In other word, integrity means to consider such dependencies in life cycle of each component. Although systemic thinking converrs remarkable part of integrity related concepts, it is not always consistent with systemic thinking (Bitichi, 1995). Systems integrity is a term with different meanings for different people and it has caused that a comprehensive and full definition of system integrity is not provided yet. However, once can consider integrity as conditions by which all operations and processes of the organization cooperate with each in an efficient and effective manner in order to achieve joint goals and to maximize added value and to minimize system wastes. According to Kahn & Mentzer, integrity is defined as ;Interaction among activities; Joint goals and values and close cooperation; A combination of 1 and 2 (Asgari, 2003).

In a detailed study by Purdue University in the United States on organizational integrity, it was defined as a factor which can automatize how to use information in organizational operations or other organization and to improve designing and the operations of units which serve customers (production and service providing) and using HR efficiently in organization. Chiu (2003) believes that integrity is created by simultaneous and coordination of related activities. In the same line, Chen (2008) believes that integrity is organizational relationship and inter-organizational coordination through information flow.

According to him, organizational integrity includes: Sharing information by manufacturing engineering, marketing and all backup groups; Eliminating all processes in the organization that ate without added value; Improving the capability of the organization to serve customers; Assets management improvement. Trkman (2006) defines integrity as coordination between operations, standardization and a whole set.

The aim of integrity is to improve productivity of systems (Senajian, 2004). The most important results of integrity include: information costs and managerial data mitigation, reducing needed time to produce objective reports, significant analyses on organizational operations, immediate access to data and saving needed time to access information and data exploration, equipping the organization and contribution by different sections, immediate study of all cash and financial flows in the organization (participants in Tadbir Monthly Roundtable, 2006; Braganza, 2002; Chou et al, 2005). All these cases would lead into efficiency improvement, more capital return and competitive advantage.

In any organization, agility usually considers several radical capabilities:
• **Responsiveness**: the ability to identify changes and rapid reaction to them;
• **Competency**: a broad set of capabilities which paves the way for productivity toward organizational aims and purposes;
• **Flexibility**: the ability to process different products and services and achieving different purposes by the same initial facilities;
• **Quickness**: the ability to do the tasks and operations in the shortest possible time (Sharify and Zhang, 1999).

The basis of agility is the integrity of IT, HR, organizational business process, innovation and facilities (Tseng and Lin, 2011), likewise, Kidd (1994) asserts that agility is achieved through integrity. Therefore, if an organizational looks for agility, it should consider agility capabilities and to improve and groom them to improve productivity in the organization (Bagherzadeh et al, 2010). In present paper, we are study the impact of organizational integrity on agility capabilities as a need of today organizations to grow in a competitive and turbulent environment.

![Diagram of the conceptual model]

**Figur 1**: The conceptual model

**Research Method**

Present paper is an applied and quantitative one conducted among Fars Research University 104 employees of whom 84 were selected through random sampling method. Data collection tool is organizational integrity measurement standard questionnaire devised by Avelino and Kaptein (2005) as well as standard agility questionnaire devised by Sharifi and Zhang (1999). Integrity questionnaire consists of 12 items while agility measurement questionnaire has 28 items with reliability and validity. Since some questions were changed during the research, their reliability and validity were measured again and explained in results section. Gathered data was analyzed by Warp PLS software package and structural equation modeling (SEM).
Findings
To analyze causal relationships between constructs used in the study, the structural equation modeling (SEM) approach was adopted. Structural equation modelling is a statistical technique used for testing and estimating causal relationships based on statistical data and qualitative causal assumptions. The SEM technique can be divided into two parts. The measurement model is the part which relates measured indicators to latent variables. The structural model is the part that relates latent variables among one another. The estimation of the model requires calculating of the parameters related to both measurement model and structural model using appropriate estimation methods.
All values of measures related to latent variable are over 0.5. Therefore, one can say that measurement model has reliability on latent variables.
Another indicator is construct reliability for which combined reliability and Cronbach’s alpha ratios are used.

Table 1: latent variables, construct reliability

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>composite reliability</th>
<th>flexibility</th>
<th>responsiveness</th>
<th>competency</th>
<th>quickness</th>
<th>Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cronbach’s alpha</td>
<td>0.913</td>
<td>0.885</td>
<td>0.907</td>
<td>0.907</td>
<td>0.929</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.891</td>
<td>0.826</td>
<td>0.884</td>
<td>0.876</td>
<td>0.916</td>
</tr>
</tbody>
</table>

As seen in above table, all values of combined reliability are over 0.7. Cronbach’s alpha value is seen in above table and it is seen that all ratios are greater than 0.7. Therefore, measurement model has construct reliability.
In present study, organizational integrity is considered as independent variable and agility capabilities (quickness, responsiveness, competency and flexibility) as dependent variables extracted from below model analysis results:
The ratios of all paths are shown in below figure. Each ratio is acceptable if P-Value is less than 0.05. As observed, all ratios are less than 0.05.
Concerning path ratios, higher ratios indicate that integrity has more impact on variable. In achieved structure, integrity has the highest impact on competency (0.63) followed by responsiveness (0.61), quickness (0.60) and flexibility (0.58). The prediction strength of designed model is analyzed by $R^2$ for dependent variables (Chin, 1998; Falk & Miller, 1992; Leal & Roldan, 2001). Falk and Miller (1992) considered values equal or greater than 0.1 for $R^2$. By the figure, one can conclude that structural model in current study has sufficient prediction strength. Determination ratio is 0.36 for quickness, 0.4 for competency, 0.38 for responsiveness and 0.34 for flexibility and this shows that among agility components, competency enjoys the highest determination ratio.

Fitness indicators are proper measures for model quality (Kock, 2011). Since the aim of present paper is proper fitness, studying fitness indicators is especially necessary. Below, fitness indicators from software are used.

**Table 2: model fitness indicators and $P$ values**

<table>
<thead>
<tr>
<th>Measure</th>
<th>$P$-value</th>
</tr>
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<tbody>
<tr>
<td>(APC)</td>
<td>0.607</td>
</tr>
<tr>
<td>(ARS) $R^2$</td>
<td>0.369</td>
</tr>
<tr>
<td>(AVIF)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

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Good if < 5
As seen in table 2, probable value for APC and ARS is computed less than 0.05. Therefore, the model has proper fitness. Likewise, the model’s fitness is proper since AVIF equals with 1.00 and less than 5.00.

**Conclusion**

Considering above discussion and achieved results, one can conclude that agility is recognized as a main principle for survival in turbulent markets and it is used to help companies to provide right products in right time to right customers (Agarwal, 2007, Lin, Chiu and Chu 2006, Yusuf, 1999) and management thinkers like Kidd (1994) believe that the way to achieve organizational agility is through organizational integrity. It is also recognized in literature that agility should be achieved in practice by exploiting and integrating scientific tools (Sharifi and Zhang, 2000). Other scientists have mentioned agility as an enabler and a trait of agile organizations. Considering above discussions, organizations need integrity in all organizational levels and processes in order to achieve productivity and better performance and higher levels of competency, responsiveness, quickness and flexibility (agility capabilities). To this end, they can use integrity principles such as coordination, comprehensiveness, precision, homogeneity and process orientation toward being pioneer in business and providing customers with better services. The important point is achieved determination ratio in agility components. Competency has the highest determination ratio (0.4), it means that integrity explains only 40% of competency variable changes and remained 60% changes are due to other variables not mentioned in present research. Therefore, in addition to integrity variable, there are other variables in which organizational agility capabilities are involved and play an effective role. It is recommended to identify and study the impacts of other variables on organizational agility capabilities in future researches.

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