

Katsaros, Kleanthis K.; Tsirikas, Athanasios N.; Nicolaidis, Christos S.

Article

Firm performance: The role of CEOs' emotional and cognitive characteristics

International Journal of Business and Economic Sciences Applied Research (IJBESAR)

Provided in Cooperation with:

International Hellenic University (IHU), Kavala

Suggested Citation: Katsaros, Kleanthis K.; Tsirikas, Athanasios N.; Nicolaidis, Christos S. (2015) : Firm performance: The role of CEOs' emotional and cognitive characteristics, International Journal of Business and Economic Sciences Applied Research (IJBESAR), ISSN 2408-0101, Eastern Macedonia and Thrace Institute of Technology, Kavala, Vol. 8, Iss. 1, pp. 51-81

This Version is available at:

<https://hdl.handle.net/10419/144647>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Firm performance: The role of CEOs' emotional and cognitive characteristics

Kleanthis K. Katsaros¹, Athanasios N. Tsirikas² and Christos S. Nicolaidis³

¹ University of Macedonia, Department of Accounting & Finance, Egnatia St. 156, 54006, Thessaloniki, Greece, kleanthis.katsaros@gmail.com

² University of Macedonia, Department of Accounting & Finance, Egnatia St. 156, 54006, Thessaloniki, Greece, tsirikas@uom.gr

³ University of Macedonia, Department of Accounting & Finance, Egnatia St. 156, 54006, Thessaloniki, Greece, cnicol@uom.gr

Abstract

Purpose – The paper examines the relationships between CEOs' personal traits, emotions, attitudes and tolerance of ambiguity; and subsequently, the influence of CEOs' ambiguity tolerance in firms' performance.

Design/methodology/approach – Survey data were collected from 256 ICT firms established in Greece. Their CEOs completed questionnaires examining TOA, personal traits, emotions and attitudes in the workplace. Principal components analysis and ordinary least-squares regressions were used to explore the hypotheses of the paper.

Findings – Three factors characterize CEOs' emotions, namely pleasure, dominance and arousal; two factors their involvement, namely importance and interest; and, respectively, one their emotional intelligence namely, empathy/handling relationships. Further, locus of control; importance; arousal; empathy/handling relationships and interest affect decisively CEOs' tolerance of ambiguity, which in turn, seems to influence positively firms' performance.

Research limitations/implications – Further research is required in Greek ICT industry regarding the influence of CEOs' emotional and cognitive attributes in organizations' financial performance. Likewise, this research should be expanded to other industries.

Originality/value – The originality of this study lies in the finding that emotional and cognitive characteristics affect CEOs' TOA, which, in turn, influences significantly firms' performance. Another significant contributing factor is that the study is carried out in Greece, where few studies have been conducted in this area.

Keywords: Ambiguity Tolerance, Attitudes, Emotions, Performance, Personal Traits

JEL Classification: D23, L25

1. Introduction

There is no doubt that the current business environment is one of the most challenging firms have ever faced. The downturn in the world economy and analogous increases in unemployment have resulted to lower consumer demand and tighter budgets. Given such dynamic environmental conditions, a firm's ability to adapt quickly is crucial to its success in achieving sustainable competitive advantage (Hitt et al., 1998). Further, it is acknowledged that CEOs' personal and cognitive attributes are key indicators of firm flexibility (Rajagopalan and Spreitzer, 1997) and firm performance (Nadkarni and Herrmann, 2010) especially during changing, complex and uncertain situations. Hence, in the current tumultuous business environment, CEOs' tolerance of ambiguity rises as a major skill able to facilitate organizations' change initiatives (Huber and Glick, 1995). However, although it is widely accepted that such individual-level emotional/cognitive factors (e.g. readiness to change, change receptivity, tolerance of ambiguity/uncertainty, openness to change) may enhance individual performance (e.g. Amenakis et al., 1993; Cunningham et al., 2002; McNabb and Sepic, 1995; Weber and Weber, 2001); there is a little consensus in the academic and practitioner literature whether such

factors can influence positively and directly firm performance.

In this respect, the main aim of this paper is firstly, to examine the influence of CEOs' personal traits, emotions and workplace attitudes in their tolerance of ambiguity; and secondly, to investigate the influence of CEOs' ambiguity tolerance in firms' performance. We chose CEOs because on the one hand, they are acknowledged as firms' major decision makers (Calori et al., 1994) and on the other hand, their personal characteristics are reflected to their firms' strategies (Hambrick and Mason, 1984). Moreover, empirical evidence suggest that characteristics of CEOs affect strategic decision processes (Peterson et al., 2003) and strategic actions that have implications for firm performance (Nadkarni and Narayanan, 2007). We tested our model in data on the CEOs of Greek ICT firms. The management style of Greek firms is rather centralized, authoritative and dominated mostly by one powerful individual (Bourantas and Papadakis, 1996; Morgan, 1994). Further, Greek ICT industry is an extremely important sector for the suffering Greek economy with extremely high change rates in terms of complexity, novelty and competition (EITO, 2011). Our results extend previous researches by highlighting how CEOs' personal and cognitive characteristics influence firm performance by either enhancing or

inhibiting their tolerance of ambiguity in a complex and dynamic industry context.

2. Theory Development and Hypotheses

2.1 Tolerance of ambiguity

Tolerance of ambiguity is generally defined as a range of reactions to stimuli that are considered unfamiliar, complex, uncertain, or subject to multiple interpretations (McLain, 1993). Further, Budner (1962) suggests that there are typically three types of ambiguous situations: *novelty* (completely new situations); *complexity* (excessively complex situations); and *insolubility* (opposing situations).

The way an individual interacts with ambiguous situations (e.g. perceive, interpret, react, adjust) ultimately defines one's tolerance of ambiguity level. As a result of multiple variables (e.g. perceptions, personality traits, emotions, values, attitudes), the ambiguity tolerance construct is complex (Benjamin et al., 1996). Nevertheless, ambiguity tolerance is a variable that is often examined on a unidimensional scale. A person with low ambiguity tolerance experiences stress, reacts prematurely, and avoids ambiguous stimuli. At the other extreme, a person with high ambiguity tolerance perceives ambiguous situations as desirable, challenging, interesting and accepts their complexity or

incongruity (Kirton, 1981). On the whole, literature suggests that tolerance of ambiguity plays a significant role in individual performance (Cook and Hunsaker, 2001).

Numerous attempts have been made to examine the relationship between tolerance for ambiguity and a number of personal, emotional, behavioral and working attitudes. Generally, tolerance of ambiguity is correlated with job satisfaction (Nicolaidis and Katsaros, 2011), organizational commitment (Judge et al., 1999), creativity (Tegano, 1990), decision making (Wilkinson, 2006), critical thinking (Facione et al., 1994), risk acceptance (Lauriola and Levin, 2001), and effective leadership (Lane and Klenke, 2004). Overall, managers with high ambiguity tolerance may exhibit higher performance in new situations by approaching organizational initiatives positively (Sawyer, 1990).

2.2 CEOs' personality traits, emotions, attitudes and tolerance of ambiguity

The CEO literature suggests that personal, emotional and psychological attributes of CEOs influence their strategic decisions (Hiller and Hmabrick, 2005). In more detail, they determine how intensively they will search for information, how they learn about external environmental and internal organizational evolutions, and which sources they rely on to obtain and

disseminate information (Miller and Toulouse, 1986). Nevertheless, all of our behaviour is somewhat shaped by our perceptions, personalities, emotions and experiences (Langton and Robbins, 2006).

Locus of control: It is a personal trait that refers to an individual's perception of the source of his or her fate (Langton and Robbins, 2006). Individuals with an internal locus of control (*internals*) believe that they control their destinies and thus, they are more likely to deal with a problem, once they come across it, during their effort to achieve a goal. On the other hand, individuals with an external locus of control (*externals*) believe that their lives are controlled by outside forces (e.g. luck, chance, destiny) and thus, they sense they have little control over their life (Rotter, 1975). A large amount of research has compared internals with externals. Internals exhibit greater performance when the work requires complex information processing, self-motivation, initiative, independent action and offers incentive reward for greater productivity (Miner, 1992). In contrast, externals tend to be less satisfied and involved in their jobs, more stressed and anxious (Benassi et al., 1988); and reluctant to take risks and work on self-improvement (Rotter, 1975). Within this context, Mamlin et al. (2001) suggest that generally top executives appear to be more internals. Overall, internally focused CEOs devote more effort to

environmental scanning by using a wide array of recourses (Finkelstein and Hambrick, 1996) and thus, they seem to be more flexible, adaptable and competent.

H1: CEO ambiguity tolerance is positively related to internal locus of control.

Emotional attitudes: Generally, no study of organizational behavior could be comprehensive without considering the role of emotions in workplace behavior (Langton and Robbins, 2006). Emotions are generally viewed as key mechanisms that preserve personal values in ambiguous situations and signal the need for change (Lazarus, 1991). In this respect, emotions may intermediate as an adaptive mechanism during change by empowering employees (Nicolaidis and Katsaros, 2010). Literature suggests that employees' emotions may affect the process of motivation and influence a number of performance and satisfaction variables such as, commitment, intention to quit and level of effort (Basch and Fisher, 2000). In more details, positive emotions in workplace may enhance interpersonal collaboration and flexibility (Fredrickson, 1998); facilitate employees to set higher and more challenging personal goals (Locke and Latham, 1990); and thus, increase the level of ambiguity tolerance (Nicolaidis and Katsaros, 2011). Authors indicate that almost all

emotions can be examined along a number of bipolar and independent dimensions. Literature suggests that the three prevailing dimensions are namely, *pleasure*, *arousal* and *dominance - level of uncertainty* (e.g. Russel and Mehrabian, 1974; Tiedens and Linton, 2001). *Pleasure* refers to a feeling that is felt to be different from preference, liking, positive reinforcement and approach avoidance (Bearden et al., 1993). Most important, it is associated with objectives' fulfillment (Lazarus, 1991) and may enhance individual's urge to think, explore and expand personal boundaries and creativity (Fredrickson, 1998). *Arousal* is a feeling state that varies along a single dimension from sleep to frantic (Bearden et al., 1993). As authors suggest, excessive arousal provoked by a high level of ambiguity may lead individuals to become reluctant to react (Liu and Perrewé, 2005) and initiate deterioration in cognitive performance (Kaufman, 1999). Thus, a moderate level of emotional arousal is likely to be associated with a high degree of ambiguity tolerance (Katsaros and Nicolaidis, 2012). *Dominance* refers to the extent to which one feels unrestricted or free to act in a variety of ways during complex and ambiguous situations (Bearden et al., 1993). It is positively related to job satisfaction, organizational commitment (Ashford and Bobko, 1989), trust and organizational leaders' credibility (Schweiger and Denisi,

1991). On the whole, the dominance factor is determined by the level of ambiguity that any complex change engulfs. The above analysis signifies that pleasure arousal and dominance may influence positively tolerance of ambiguity.

H2: CEO ambiguity tolerance is positively related to pleasure, arousal and dominance.

Emotional intelligence: Emotional intelligence (hereafter EI) refers to the ability of an individual to perceive, appraise, and express emotions; to access or generate feelings when they assist thinking; to understand emotions; and to adjust emotions to promote intellectual growth (Mayer and Salovey, 1997). Similarly, Goleman (1998a, p. 317) defines EI as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" and suggests that it may influence work and organizational effectiveness. Further, research suggests that employees with high levels of EI are more adaptable to stressful events by employing better coping strategies (Bar-On, 2001); exhibit greater interpersonal and social skills relating to interacting with and influencing others (Mumford, Marks et al., 2000), and thus, may lead more effectively (Higgs and Rowland, 2002). Overall, given that change uncertainty is frequently associated with emotional conflict (Downing,

1997) and that emotions play an important role during complex situations (Walsh, 1995); it is proposed that EI can contribute positively to the effective management of change ambiguity (Cooper, 1997; Goleman, 1998b).

H3: CEO ambiguity tolerance is positively related to emotional intelligence.

Job Satisfaction: Job Satisfaction emphasizes on the task environment where an employee performs his/her work and the direct reactions to specific tangible aspects of the working environment (Mowday et al., 1982). It is mainly defined as the emotional and cognitive attitude held by an employee about different aspects of his/her work (Wong et al., 1998). More to the point, research has identified a positive relationship between job satisfaction and ambiguity tolerance (Judge et al., 1999) and suggests that job satisfaction plays a critical role in employees' acceptance of change ambiguity (Iverson, 1996; Lau and Woodman, 1995). Respectively, Wanberg and Banas' study (2000) showed that low levels of change ambiguity tolerance were associated with decreased job satisfaction and stronger intentions to quit. Overall, job satisfaction may facilitate management's flexibility, adaptability and readiness to change. Therefore, it constitutes a significantly affecting factor of tolerance of ambiguity.

H4: CEO ambiguity tolerance is positively related to job satisfaction.

Organizational commitment: It is mainly examined in terms of workers' identification with the organizational goals (May et al., 2002, p. 776), and in terms of attachment and loyalty (Armstrong, 2001, p. 171). Generally, organizational commitment is defined as the relative strength of an individual's identification with and involvement in a particular organization (Mowday et al., 1979, p. 226). There is evidence that organizational commitment plays an important role in employee's acceptance of ambiguity in the workplace (Cordery et al., 1993; Iverson, 1996). Relatively, Lau and Woodman (1995) argue that highly committed employees are more willing to accept organizational change ambiguity if it is perceived to be useful. That is, an individual committed to an organization accepts its values, is willing to exert effort on its behalf, and wishes to remain in the organization (Mowday et al., 1979). However, they note that a highly committed employee may resist to change ambiguity if he/she perceives it as a threat for his/her own benefit or harmful to the organization. Concluding, every organizational change requires management's commitment since management's role is considered pre-eminent, essential and/or fundamental (Lascelles and Dale, 1990; Savolainen, 1998).

H5: CEO ambiguity tolerance is positively related to organizational commitment.

Involvement: It is an attitude towards the work role and its context (The Blackwell Encyclopedia of Management). It is mainly defined as the employee's willingness to support the organization even if additional time and effort are required (Madsen et al., 2005). Literature suggests that employees' involvement is a key component of organizational commitment (Eby et al., 2000; Madsen et al., 2005); relates to their cognitive support during the change process (Oswald et al., 1994); may promote personal readiness for change (Armenakis et al., 1993) and thus, enhance tolerance of ambiguity. Scholars suggest that involvement can be examined along a number of bipolar dimensions that can be viewed as independent one from the other (e.g. Peter and Olson, 2002). Relevantly, McQuarrie and Munson (1991) support that involvement, can be examined by two prevailing bipolar dimensions namely, *importance* and *interest*. *Importance* refers to an important event, decision or problem that has a big effect or influence on people's lives or on future incidents (Longman Dictionary of Contemporary English, 2003). Relatively, Curren and Harich (1994) suggest that when individuals perceive an ambiguous situation as relatively important, they will transfer their own perceived feelings

to the relevant event (i.e. managers will exhibit high involvement towards a change initiative). *Interest* concerns the personal interest that a person has in an event. Relatively, when someone is interested in an ambiguous situation, he/she will exhibit greater commitment, identification and involvement during its evaluation (McQuarrie and Munson, 1991). The above analysis signifies that CEOs' involvement may facilitate ambiguous situations appraisal and tolerance.

H6: CEO ambiguity tolerance is positively related to importance and interest.

H7: The interaction of CEO s' demographical characteristics; personal locus of control; emotions of pleasure, arousal and dominance; emotional intelligence; attitudes of job satisfaction, organizational commitment, and involvement; affect their ambiguity tolerance.

2.3 CEO characteristics and firm performance

Firm performance is a complex issue in the organizational literature, given that it suffers from conceptual problems regarding its definition, validity and measurement (Murphy, 1996). Thus, any evaluation of firm's performance must focus on its operative goals. It should be also noted that the terms "effectiveness" and "performance" are used interchangeably because problems related to their definition, measurement and explanation are nearly identical (March and Sutton 1997).

According to the rational goal model, firm performance can be measured through quantitative data that reflect its profitability and efficiency (e.g. Kotter and Heskett, 1992). These measures are nonbiased and particularly helpful for single-industry studies because of the uniformity in measurement across all organizations (Venkatraman and Ramunujam, 1986). Further, researchers propose Return on Equity (ROE; Viverita, 2008), Return on Assets (ROA; Crosson et al., 2008), Net Profit Margin (Mueller, 1990); Efficiency Ratio (Needles et al., 2007) and Total Asset Turnover (Bodie et al., 2004) as common measures of firm performance. Overall, it should be noted that no single measure may fully clarify all aspects of the term (Doyle, 1994).

Within this context, quite a few studies have examined the relationship between individual characteristics and firm performance (e.g. age, education, experience, leadership practices, CEO personality; Fasci and Valdez, 1998; Frith, 1998; Ozcelik et al., 2008). Nevertheless, there is a little consensus about the influence of individual-level factors to organizational performance. Firstly, Argyris (1964) and McGregor (1960) proposed that the way employees experience their work would be reflected in organizational performance. In the same vain, others researchers propose that certain

individual-level factors (e.g. job satisfaction, commitment, motivation, citizenship behavior; Brewer and Selden, 2000; Kim, 2005), locus of control (De Brabander and Van Witteloostuijn, 1996), employee involvement (Jones and Kato, 2003) may positively affect organizational performance. Further, change management literature suggests that with the acceleration of globalization and environmental dynamism, readiness to change (e.g. individual's attitude towards change) have a positive effect on firms' financial (i.e., profitability, costs) and organizational (i.e., efficiency, productivity) outcomes (Goldhar and Lei 1995; Li et al., 2005; Rudd et al., 2007; Tan and Peng, 2003). Similarly, it is proposed that CEOs' personal and cognitive attributes is a key indicator of firm flexibility (Rajagopalan and Spreitzer, 1997) and performance (Nadkarni and Herrmann, 2010). Overall, re-searchers claim that CEOs with high ambiguity/uncertainty tolerance may exhibit higher performance in new and complex situations (Jonassen and Grabowski, 1993; Sawyer, 1990); and in parallel, that their performance is a major determinant of the success of an organization (Fiedler, 1996; Thorlindsson, 1987). Thus, the following hypothesis arises:

H8: CEO ambiguity tolerance influences positively firm performance

3. Methods

3.1 Setting

The economy of Greece is the 32nd largest in the world by nominal gross domestic product (GDP) and the 15th largest in the 27-member European Union (Eurostat, 2012). However, decades of unrestrained spending, cheap lending, extremely bureaucracy and corruption, and failure to implement necessary financial and structural changes; left Greece heavily exposed when the global economic crisis begun in 2008-2009 (€330 billion national debt, 144.9% of GDP, 2010; €420 billion national debt, 198.2% of GDP, estimation for 2012). Thus, on 2 May 2010, E.E. and the International Monetary Fund (IMF) agreed on a €110 billion loan for Greece, dependent on the implementation of harsh austerity measures. Further, in October 2011, E.E. leaders agreed on a second €130 billion bailout loan, conditional not only the implementation of another harsh austerity package, but also that all private creditors should agree to a restructure of the Greek debt, reducing the debt from a forecasted 198% of GDP in 2012 to only 120.5% of GDP by 2020. The second deal was approved by all parties in February 2012, and became activated one month later, after the last condition about a successful debt restructure of all Greek government bonds, had been met. Within this context, if Greece can manage to comply with all economic targets outlined in the

bailout plan, a full return to the private capital markets will be possible again in 2015.

Regarding, the Greek ICT industry, we can support that though it is still in its infancy compared to other EU countries, it plays a vital role in the Greek economy and exhibits relevant resistance to the Greek financial crisis. In more details, Greek ICT sector's turnover reached €11.09 billion in 2008, €10.40 billion in 2009 and €9.6 billion in 2010 respectively. However, Greece, among 138 countries, holds only the 64th position in the Networked Readiness Index (World Economic Forum, 2011). NRI index examines the conduciveness of national environments for ICT development and diffusion (i.e. broad business climate, regulatory aspects, human and hard infrastructure needed), the degree of preparation for and interest in using ICT in their daily activities and operations by the three main national stakeholders (i.e. individuals, business sector, and government), and the actual use of ICT by the above three stakeholders. Thus, Greece needs to reinforce their market environment (90th) and improve their stakeholders' overall readiness to use new technologies (91st), while increasingly moving ICT usage and diffusion to the center of the national agenda (108th). In any case, it should be noted that the intense financial and structural transformations in the Greek

economy; the upcoming technological changes (e.g. transition to all-digital networks, next generation networks); the emergence of new services [e.g. combination of broadband (wired or wireless), digitalization of media content, falling costs of producing digital content]; the changes in the current market structure (e.g. market developments and associated changes in industry structure, changing consumer and/or citizen engagement, globalisation of markets and regulation, national digital communications strategies; ICT Regulation Toolkit, 2011); can potentially cause intense uncertainty, great ambiguity, extreme insecurity, and painful organizational changes that may ultimately affect negatively Greek ICT firms' overall performance.

Finally, the international literature suggests that Greek culture is characterized by extremely high intolerance of uncertainty, ambiguity and complexity. Respectively, Hofstede (2001) research findings suggest, that within a sample of 56 nations, Greece has the highest uncertainty avoidance value (Greece: 112, nations mean average: 66,4). Uncertainty avoidance refers to a society's uncertainty and ambiguity tolerance; it ultimately refers to what extent its members feel either uncomfortable or comfortable in unstructured (unknown, surprising, different from usual) situations.

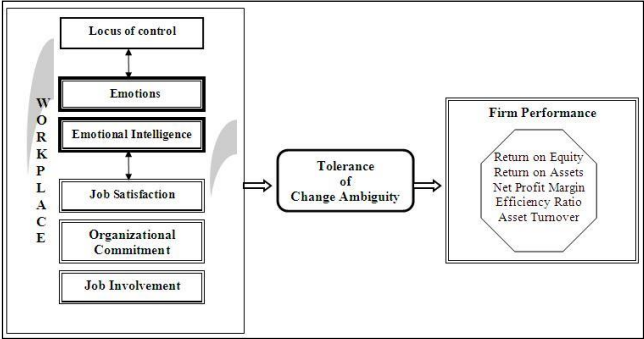
Uncertainty avoiding societies are routine-oriented; adapt with difficulty to novel social and environmental evolutions and changes; and are less innovative (Shane, 1995). Similarly, other researches also support that high uncertainty avoidance (Adamides et al., 2003; Nicolaidis, 1992) and ambiguity intolerance (Nicolaidis and Katsaros, 2011) characterize the culture of Greek firms in terms of risk evasion and change avoidance. In the same vein, according to the WVS Cultural Map of the World (Inglehart and Welzel, 2010), Greece has the 69th highest Traditional/Secular-rational value among 253 nations (Greece: 0,77, nations mean average: -0.14). Traditional/Secular-rational value characterizes societies that emphasize the importance of authority, absolute standards, traditional family values; and in parallel, they value economic and physical security above all.

3.2 Purpose and Methodology

Taking into consideration the international literature, the current financial crisis that provokes increased ambiguity/uncertainty, the "rigid" national and business culture (norms and values), the importance of the ICT industry to the Greek economy, and the few relevant studies in Greece; the purpose of the research was to examine how CEOs' personal traits, emotions and attitudes form their tolerance of ambiguity; and subsequently, the

influence of CEOs' ambiguity tolerance in firms' performance.

Figure 1: Research model



The research was conducted, in close cooperation with the Greek Information Technology Firms Association, the second semester of 2010. The sample for this study was drawn from 480 ICT firms established in Greece. Overall, 256 CEOs participated to the research (response rate 53,33%). The first month we organized a relevant workshop to explain the rationale and significance of the research, along with its goals, supporting objectives and expected results. The next two months, we conducted a pilot test to examine the research features and functionality. In parallel, for the purpose of our research we created a relevant web

page in order to receive data in electronic form. Consequently, we send a presentation of our research to all CEOs along with guidelines for the on line questionnaire. All through the research period, we provided full support (i.e. personal meetings, phone or e-mail) to the CEOs. In line with previous researches (e.g. Gullkvist, 2013; Hayashi, 2000; Katsaros et al., 2014; Tsirikas et al., 2012; Wooldridge, 2013), we used principal components analysis and ordinary least-squares regressions to explore the hypotheses of the paper. Table 1 summarizes the demographic characteristics of the participants in our research.

Table 1: Demographic characteristics of the sample

| Managers | | | Firms | | |
|--|-----|---------------|-------------------------|-----|---------------|
| | N | Frequencies % | | N | Frequencies % |
| Sex | | | Region | | |
| Male | 190 | 74.2 | East Macedonia/Thrace | 13 | 5.1 |
| Female | 66 | 25.8 | Central Macedonia | 102 | 39.8 |
| Age | | | West Macedonia | 5 | 2.0 |
| 18-24 years | 9 | 3.5 | Epirus | 3 | 1.2 |
| 25-34 years | 68 | 26.6 | Thessaly | 10 | 3.9 |
| 35-44 years | 108 | 42.2 | Ionian Islands | 1 | 0.4 |
| 45 + years | 71 | 27.7 | West Greece | 4 | 1.6 |
| Marital Status | | | Central Greece | 4 | 1.6 |
| Married | 173 | 67.6 | Attica | 89 | 34.8 |
| Single | 83 | 32.4 | Peloponnese | 3 | 1.2 |
| Education | | | South Aegean | 1 | 0.4 |
| Secondary | 20 | 7.80 | Crete | 4 | 1.6 |
| University | 131 | 51.2 | Cyprus | 16 | 6.3 |
| Master | 92 | 35.9 | North Aegean | 1 | 1.0 |
| PhD | 12 | 4.7 | Age | | |
| Other | 1 | 0.4 | 1-5 years | 50 | 19.5 |
| Working experience (pr. position) | | | 6- 10 years | 50 | 19.5 |
| 1-5 years | 90 | 35.3 | 11-15 years | 62 | 24.3 |
| 6-10 years | 68 | 26.7 | 16 + years | 94 | 36.7 |
| 11+ years | 97 | 38.0 | Employees | | |
| Total working experience | | | 1-11 | 119 | 46.5 |
| 1-5 years | 29 | 11.3 | 11-50 | 71 | 27.7 |
| 6-10 years | 51 | 19.9 | 51-250 | 42 | 16.4 |
| 11+ years | 176 | 68.8 | 250 + | 24 | 9.4 |
| Position | | | Firm life circle | | |
| CEO | 55 | 21.5 | Initial | 8 | 3.1 |
| General Manager | 39 | 15.2 | Growth | 149 | 58.2 |
| Top-level Manager | 162 | 64.3 | Mature | 87 | 34.0 |
| | | | Decline | 12 | 4.7 |
| | | | Annual Turnover | | |
| | | | € <1 millions | 113 | 44.1 |
| | | | € 1-10 millions | 91 | 35.5 |
| | | | € 10-100 millions | 33 | 12.9 |
| | | | € >100 millions | 19 | 7.4 |

3.3 Measures

Regarding the tolerance of ambiguity measurement, we used the Tolerance-Intolerance of Ambiguity questionnaire developed by Budner (1962). The questionnaire includes 16 items and follows a scale from 0 to 100. A score between 44 and 48 is considered relevantly neutral, while scores below 44 indicate high tolerance to ambiguity and scores above 48 indicate a low one. Locus of control was examined through the well known questionnaire developed by Spector (1988). The questionnaire includes 16 semantic different items scored on a 1 to 6 scale. As far as the measurement of emotions in the workplace, we used the Dimensions of Emotions PAD questionnaire of Havlena and Holbrook (1986) (originally developed by Russel and Mehrabian, 1974). The PAD questionnaire is composed of 12 semantic different items scored on a +4 to -4 scale. There are three independent and bipolar dimensions namely, pleasure, arousal and dominance which valuate emotional attitudes. Emotional Intelligence was examined through the "What's your emotional intelligence at work?" questionnaire (Cook and Hunsaker, 2001). The questionnaire includes 25 semantic different items scored on a 1 to 5 scale; and it captures five independent and bipolar dimensions that evaluate EI namely, self-awareness, managing emotions,

motivating oneself, empathy and handling relationships (Goleman, 1998a). For the measurement of job satisfaction, we used the 7-item scale Michigan Organizational Assessment Questionnaire developed by Cammann et al., (1979), which contains a three-item overall satisfaction subscale (Spector, 1997). Regarding the measurement of organizational commitment we used Organizational Commitment Questionnaire developed by Mowday et al., (1979) that is composed of 15 semantic different items, scored on a 1 to 7 scale. Finally, for the measurement of involvement, we used the McQuarrie and Munson's (1991) revised version of their Revised Personal Involvement Inventory (RPPII). The questionnaire suggests that individual's involvement is based on the inherent needs, values and interests and it captures two independent and bipolar dimensions that appraise involvement namely, importance and interest (Bearden et al., 1993). Further, regarding the sample demographics and the control variables, we assessed three firms' (i.e. size, age, life circle) and three CEOs' (i.e. age, education, total working experience) characteristics respectively. Finally, firm performance was examined by five well established accounting-based measures namely, Return on Assets (ROA), Return on Equity (ROE), Net

Profit Margin, Efficiency Ratio and Total Asset Turnover (McDonald et al., 2008).

Table 2: Indicators of Organizational Effectiveness

| | | |
|-------------------------------|--|---|
| Return on Equity (ROE) | Net Income/ Shareholder's Equity | It measures an organization's profitability by revealing how much profit a company generates with the money shareholders have invested. |
| Return on Assets (ROA) | Net Income/ Total Assets | It measures how profitable an organization is with respect to its total assets; how efficient management is at using its assets to generate earnings. |
| Net Profit Margin | Net Income/ Revenues | It measures how much out of every euro/dollar of sales an organization actually keeps in earnings. |
| Efficiency Ratio | Expenses/ Revenues | It measures expenses as a percentage of revenue and analyzes how well an organization uses its assets and liabilities internally. |
| Asset Turnover | Revenues/ Total Assets | It measures the amount of sales generated for every euro/dollar's worth of assets. |

4. Analyses and results

We measure firms' performance using a three year average return (2008-2010) rather than a return for a specific year (2010). We believe this provides a better measure of their ongoing performance because it helps to reduce short-term

fluctuations due to temporary external and/or internal events. Firms' balance sheet analysis revealed the severe financial reality that ICT firms experience in the current turbulent Greek economic environment.

Table 3: Indicators of Organizational Effectiveness (2008-2010) – ICT industry

| | ROE (%) | ROA (%) | Net Profit Margin (%) | Efficiency Ratio | Asset Turnover |
|-------------------------|----------------|----------------|------------------------------|-------------------------|-----------------------|
| Mean | 31.85 | 6.195 | 1.73 | 0.94 | 1.11 |
| SD | 84.55 | 11.50 | 28.86 | 0.20 | 1.00 |
| Min | -152.0 | -25.33 | -170.33 | 0.51 | 0.09 |
| Max | 422.66 | 56.33 | 41.66 | 1.97 | 5.55 |
| Mean values (2008-2010) | | | | | |

The descriptive statistical results revealed that the tolerance of ambiguity index value is equal to 58,05 (sd:8,27). Thus, they reveal CEOs' intolerance of uncertainty and ambiguity in their business environment. Further, their locus of control degree is 4,17 (sd:0,52); hence, they consider that the future depends

more on their own behaviour and actions, rather than luck or chance. Furthermore, CEOs' exhibit significant job satisfaction (mean: 5,85, sd: 0,85) and moderate organizational commitment (mean: 3,41, sd: 0,53). Table 4 summarizes the descriptive statistical results.

Table 4: Descriptive Statistical Results

| Index | Mean | SD | Scale | Coefficient Alpha Reliabilities | Managers |
|----------------------------------|-------------|-----------|--------------|--|-------------------------|
| Tolerance Of Ambiguity | 58.05 | 8.27 | 100 - 0 | 0.81 | Low ambiguity tolerance |
| Locus Of Control | 4.17 | 0.52 | 1 - 6 | 0.78 | Internal orientation |
| Job Satisfaction | 5.85 | 0.85 | 1 - 7 | 0.77 | Sufficiently satisfied |
| Organizational Commitment | 3.71 | 0.53 | 1 - 7 | 0.79 | Moderately committed |

The first principal component analysis results revealed three factors that constitute CEOs' emotions in the workplace. The three factors have eigenvalues greater than 1 and

account for 70,70% of the total variance. These factors are (i) *pleasure* (variance 47,91%), (ii) *dominance* (variance 11,96%), and (iii) *arousal* (variance 10,83%). High reliability

also characterizes the three factors. The Cronbach coefficient alpha is 0,94, for the *pleasure* factor, 0,87 for the *dominance* factor and 0,67 for the *arousal* factor (moderate but acceptable level $\alpha > 0,6$ – see: Robinson et al., 1991; Kerlinger and Lee, 2000). On the whole, CEOs' emotions are vaguely positive. The factor of

pleasure, on a -4 to +4 scale, has a value equal to 0,79(sd:2,00); the factor of *dominance* has a value equal to 0,72 (sd:1,85); and the factor of *arousal* has a value equal to 1,24 (sd:1,30). Finally, the correlations among the three factors are in general medium to low degree ($0,420^{**} < r < 0,569^{**}$, $^{**}p < .01$).

Table 5: Emotions - Factor Analysis Results

| Questions | I. Pleasure | II. Dominance | III. Arousal |
|-------------------------------------|-------------|---------------|--------------|
| EQ1 | .903 | | |
| EQ2 | .900 | | |
| EQ4 | .847 | | |
| EQ3 | .833 | | |
| EQ11 | | .864 | |
| EQ12 | | .845 | |
| EQ10 | | .784 | |
| EQ9 | | .675 | |
| EQ8 | | | .689 |
| EQ7 | | | .678 |
| EQ5 | | | .632 |
| EQ6 | | | .595 |
| Eigenvalue | 5.749 | 1.436 | 1.299 |
| % Variance | 47.91 | 11.96 | 10.83 |
| Cronbach α | 0.942 | 0.868 | 0.667 |
| Mean and SD | 0.79+2.00 | 0.72+1.85 | 1.24+1.30 |

The second principal component analysis results revealed two factors that describe CEOs' job involvement: (i) *importance* (variance 43,17%), and (ii) *interest* (variance 18,33%). The two factors had eigenvalues greater than 1 and accounted for 61,50% of the total variance. Further, high reliability characterizes the two factors. The Cronbach coefficient alpha

is 0,82 for the *importance* factor and 0,83 for the *interest* factor. On the whole, CEOs' involvement factors are considerably positive. The factor of *importance*, on a 1 to 6 scale, has a value equal to 5,85 (sd:0,85) and the factor of *interest* has a value equal to 4,89 (sd:1,08). Finally, the correlations among the two factors are in general

medium to low degree ($r < 0,428^{**}$, $^{**}p < .01$).

Table 6: Involvement - Factor Analysis Results

| Questions | I. Importance | II. Interest |
|-------------------------------------|---------------|--------------|
| IQ1 | .826 | |
| IQ2 | .786 | |
| IQ3 | .771 | |
| IQ6 | .704 | |
| IQ10 | .653 | |
| IQ7 | | .877 |
| IQ8 | | .791 |
| IQ4 | | .720 |
| IQ5 | | .698 |
| IQ9 | | .666 |
| Eigenvalue | 4.317 | 1.833 |
| % Variance | 43.17 | 18.33 |
| Cronbach α | 0.824 | 0.833 |
| Mean and SD | 5.85+0.85 | 4.89+1.08 |

Emotions - Factor Analysis Results. The third principal component analysis results revealed one mixed factor that describe CEOs' emotional intelligence, namely empathy/handling relationships (variance 25,83%; questions 20,15,14,25,19,24). The Cronbach coefficient alpha is 0,80 and the mean value, on a 1 to 5 scale, is equal to 3,85 (sd:0,62).

4.1 Hypothesis testing

We run ordinary least-squares (OLS) regressions in order to investigate the relationships between CEOs' personal traits, emotions, attitudes and tolerance of ambiguity (hereafter ToA); and subsequently, the influence of CEOs' ambiguity tolerance in firms' performance.

Locus of control emerged as significant predictor of ToA ($H1$). That is, CEOs with internal locus of control exhibit significant tolerance towards ambiguity in their working environment ($b = -3.325^{**}$, $p < .01$). Further, only one emotional dimension, the arousal factor emerged as a significant predictor of ToA ($H2$). CEOs with high level of arousal appear to have increased level of ambiguity tolerance in their working environment ($b = -0.894^{*}$, $p < .05$). Similarly, regarding CEOs' involvement, only the importance factor emerged as a significant predictor of ToA ($H5$). CEOs with high level of importance appear to have increased level of ambiguity

tolerance in their working environment ($b = -1.742^{**}$, $p < .01$).

In contrast, job satisfaction ($H3$), organizational commitment ($H4$) and emotional intelligence (i.e. empathy/handling relationships factor) ($H6$) didn't emerge as significant predictors of CEOs' ToA.

Regarding the hypothesis 7, one personality trait (i.e. locus of control), one E.I. characteristic (i.e. empathy/handling relationships), two attitudes (i.e. importance and interest) and three demographical characteristics (i.e. education, total

working experience 6-10 and 11+) emerged as significant predictors of CEOs' ToA ($H7$). Hence, with respect to $H5$ and $H6$, the interaction of the above factors 'energizes' the empathy/handling relationships and interest factors, which in turn, seem to influence CEOs' ambiguity tolerance. Further, three demographic characteristics emerge as significant predictors of ToA. CEOs with total working experience more than 6 years and university education tend to have lower ToA.

Table 7: Regression Analysis Results (H1-7)

| Variables | Dependent Var.: ToA | | | | | | |
|-----------------------------------|---------------------|---------|--------|--------|----------|--------|----------|
| | H1 | H2 | H3 | H4 | H5 | H6 | H7 |
| (Constant) | 71.931 | 55.328 | 56,520 | 59,159 | 68.245 | 59,159 | 75.816 |
| Predictors | | | | | | | |
| Locus of Control | -3.325** | | | | | | -3.383** |
| Pleasure | | (-,116) | | | | | |
| Arousal | | -.894* | | | | | |
| Dominance | | (-,360) | | | | | |
| Job Satisfaction | | | ,262 | | | | |
| Commitment | | | | -,226 | | | |
| Importance | | | | | -1.742** | | -2.553** |
| Interest | | | | | | | 1.399* |
| Empathy/handling relationships | | | | | | ,228 | .376* |
| Controls | | | | | | | |
| Firm Size | | | | | | | (1.233) |
| Firm Age | | | | | | | (0.655) |
| Firm life circle | | | | | | | (1.598) |
| CEO Age | | | | | | | (2.653) |
| CEO Education - University | | | | | | | 3.238* |
| CEO Education - (Master and Phd) | | | | | | | (-2.653) |
| CEO Total working experience 6-10 | | | | | | | 6.374** |

| | | | | | | | |
|--|----------|--------|------|------|---------|-------|---------|
| CEO Total working experience 11+ | | | | | | | 6.953* |
| F | 10.069** | 4.442* | .160 | .047 | 7.291** | 1.607 | 2.110** |
| N | 223 | 223 | 223 | 223 | 223 | 223 | 221 |
| R ² | .043 | .020 | .001 | 0.00 | .032 | 0.07 | 0.284 |
| <i>Standard errors are in parentheses (significance levels: *p<.05, **p<.01)</i> | | | | | | | |

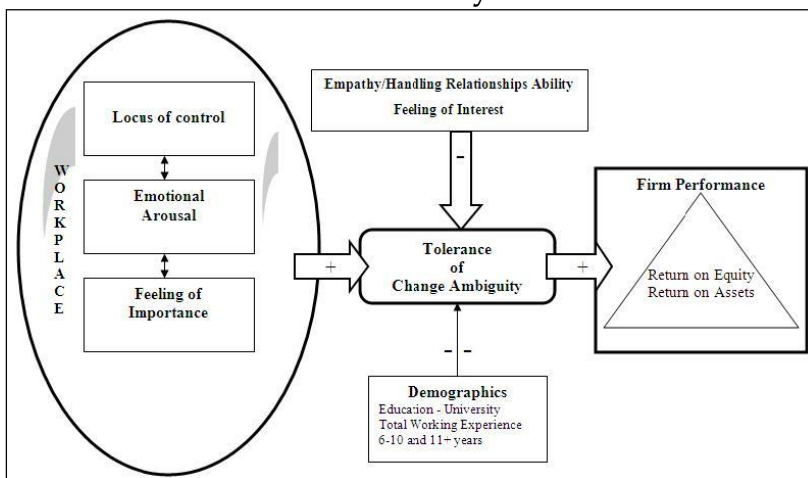
Finally, CEO ToA appears as a significant predictor of firm performance (ROE and ROA indicators; H8). Thus, CEOs with high level of ToA seem to be more efficient at using organizational equity and assets to generate earnings as well as to increase their firms' performance (ROE, b= -0.30*. p<.05*; ROA. b= -0.31**. p<.01**).

Table 8: Regression Analysis Results (H8)

| | ToA | | | | |
|--|------------|-----------|-----------|-----------|-----------|
| Dependent Var.: | <i>H1</i> | <i>H2</i> | <i>H3</i> | <i>H4</i> | <i>H5</i> |
| (Constant) | 58.616 | 59.553 | 57.754 | 48.043 | 59.340 |
| RoE | -.300* | -.305** | (-.063) | (10.221) | (-1.538) |
| RoA | | | | | |
| Net Profit Margin | | | | | |
| Efficiency Ratio | | | | | |
| Asset Turnover | | | | | |
| F | 4.526* | 8.956** | 2.185 | 2.655 | 1.549 |
| N | 221 | 221 | 221 | 221 | 221 |
| R² | 0.07 | 0.13 | 0.035 | 0.043 | 0.025 |
| <i>Standard errors are in parentheses (significance levels: *p<.05, **p<.01)</i> | | | | | |

Figure 2 illustrates the factors that affect CEOs' tolerance of ambiguity in the Greek ICT industry and in parallel, the influence of CEOs' ambiguity tolerance in firms' performance (ROA and ROE indicators).

Figure 2: CEOs' characteristics and firm performance in the Greek ICT industry



5. Conclusions and Suggestions for Further Research

The present research provides empirical evidence that CEO tolerance of ambiguity may influence positively firm performance (Return on Assets and Return on Equity). In the same vain, it is claimed that CEOs of Greek ICT firms have moderate to low tolerance of ambiguity (hereafter ToA) in their working environment (ToA=58,05; sd:8,27). As it was aforementioned, a possible cause may be the rather inflexible national and business culture (norms and values). However, taking into account the dynamic nature of ICT environment, we may assume that the interpretation of the results is unsatisfactory and disconcerting. Thus, Greek ICT firms should to try to increase their CEOs' ToA.

The research findings, likewise Mamlin et al. (2001) revealed that

CEOs have internal locus of control (hereafter ILoC) and also, a positive relationship between their ILoC and ToA. This provides further support to the international literature, which suggests that ILoC, may enhance performance in ambiguous situations (Begley and Boyd, 1987; Miner, 1992), flexibility and readiness to change (Benassi et al., 1988). Thus, with respect to Nicolaidis and Michalopoulos' (2004) study, we suggest that personal control (one of the five core dimensions of empowerment; Whetten and Cameron, 1995) may facilitate Greek banks administrations to increase their CEOs' ILoC. This could happen by applying a mix of the following three main practices: a) *fostering personal mastery experiences* that may help CEOs to master experience over ambiguous challenges, problems or difficulties, b) *providing resources* that

refers to technical and administrative support to CEOs, and c) *organizing teams* that refers to CEOs' participation in teams to accomplish things beyond their personal abilities (i.e. share information, knowledge diffusion, formulation and choice of solutions which they can either implement personally or in co-operation with others).

Further, statistical results indicate that the factor of importance is positively related to CEOs' ToA. Respectively, theoretical and empirical studies suggest that it is impossible to influence ones' perception or attitude if he/she considers it as relevantly unimportant (e.g. Curren and Harich, 1994; Hague and Flick, 1989). Consequently, we argue, that Greek ICT administrations should try to influence their CEOs' feeling of importance, by employing a collaboration/participation management style (Johnson and Scholes, 2002) that may a) enable CEOs to act as a bond between senior management and employees during ambiguous situations by playing a variety of roles (e.g. role model, mentor, translator, instigator, guardian; Floyd and Wooldrige, 1994), b) employ job enrichment practices to augment CEOs' work incentives, feelings of significance and ultimately, raise their responsibilities and their abilities to evaluate ambiguity in their working environment. (Hackman and

Oldman, 1980), and c) establish formal processes of involvement development (e.g. reassuring, giving feedback, reducing close supervision, provoking compatibility between their values and organizational goals; Whetten and Cameron, 1995).

The paper suggests that CEOs' tolerance of ambiguity can be further increased if their emotional arousal can be influenced. Consequently, according to the physiological and developmental theories of emotion, Greek ICT administrations should try to influence positively their CEOs' emotional experiences towards the change process by a) shortening the period of time they need in order to adjust emotionally and cognitively, b) controlling the level of their emotional arousal to a certain point, especially during the initial stages of change when extreme uncertainty is experienced, and c) facilitating them to comprehend the overall necessity of the proposed change (e.g. what if scenarios, current competition, early communication of intentions, future vision; Nicolaidis and Katsaros, 2011).

Additionally, our research has revealed a negative relationship between CEOs' ToA and their empathy/handling relationships skill in the workplace as well as, their interest. As literature suggests, highly committed employees with positive emotions towards their current jobs may face change ambiguity and uncertainty negatively if they

perceive them as a threat for their own benefit or harmful to the organization (Mowday et al., 1979; Vakola and Nikolaou, 2005). Consequently, we argue, that ICT firms should try to influence their CEOs' cognitive and emotional attitudes by delivering the right "message" to them (Armenakis et al., 1999). This "message" may address CEOs' tolerance of ambiguity by emphasizing on changes' necessity, suitability and effective outcomes for them and the whole organization; as well as by concurrently noting their continuous support to face it effectively.

Finally, certain aspects of the results presented here should be interpreted in light of their limitations. There are no such earlier studies in order to evaluate the research findings through time. Respectively, since the data were collected through the use of a single survey at a single point in time, the results may be influenced by temporal and/or distinctive and/or unique settings. Additionally, the fact that Greek CEOs were surveyed and that the research was conducted in a single country may to some extent limit the applicability of the results to other contexts. Nonetheless, it should be noted that further investigation needs to be conducted for the Greek ICT industry, by examining concurrently other important perceptual, emotional and attitudinal moderators (e.g. stress, risk-taking,

self-motivation, emotional intelligence, organizational citizenship, trust, self-efficacy, and readiness to change).

On the whole, this study has provided empirical evidence of a positive relationship between CEO tolerance of ambiguity and firm performance in Greek ICT industry. Further, the research findings confirm the importance of CEOs' perceptions, personality traits, emotions, attitudes and values in the workplace and they suggest that Greek ICT firms should focus on establishing positive, encouraging working climates and display greater concern for the role of their CEOs' emotional/cognitive characteristics during uncertain situations.

Acknowledgment

We would like to thank the Information Technology Firms Association, the ICT firms that support the current research and the CEOs for their participation.

References

- Adamides, E., Stramboulis, Y., and Kanellopoulos, V., 2003, 'Economic intergration and strategic change: the role of managers mental models', *Strategic Change*, 12, 2, pp. 69-82.
- Argyris, C., 1964, *Integrating the individual and the organization*, Wiley, New York.

- Armenakis, A.A., and Bedeian, A.G., 1999, 'Organizational change: a review of theory and research in the 1990s', *Journal of Management*, 25, 3, pp. 293-315.
- Armenakis, A.A., Harris, S.G., and Mossholder, K.W., 1993., 'Creating Readiness for Organizational Change', *Human Relations*, 46, 6, pp. 681-703.
- Armstrong, M., 2001, *A Handbook of Human Resource Management Practice*, London, Kogan Page.
- Ashford, S.J., 1988, 'Individual strategies for coping with stress during organizational transitions', *Journal of Applied Behavioural Science*, 24, 1, pp. 19-36.
- Bar-On, R., 2001, Emotional intelligence and self-actualization. In J., Ciarrochi, J.P., Forgas, and J.D., Mayer, Eds, *Emotional Intelligence in Every Day Life: A Scientific Inquiry* pp. 82-97. Psychology Press, Philadelphia, PA.
- Basch, J., and Fisher, C.D., 2000, 'Affective events-emotions matrix: classification of work events and associated emotions', Ashkanasy N.M. et al., *Emotions in the Workplace: Research, Theory and Practice*, Quorum Books, Westport, pp. 36-48.
- Bearden, W.O., Netemeyer, R.G., and Mobley, M.F., 1993, *Handbook of marketing scales: Multi item measures for marketing and consumer behavior research*, Sage Publications, Beverly Hills.
- Begley, T.M., and Boyd, D.P., 1987. 'Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Smaller Businesses', *Journal of Business Venturing*, 2, 1, pp. 79-93.
- Benassi, V.A., Sweeney, P.D., and Dufour, C.L., 1988., 'Is there a relation between locus of control orientation and depression?', *Journal of Abnormal Psychology*, 97, pp. 357-367.
- Benjamin, P., Borst, J., Akkermans, and Wielinga, B., 1996, 'Ontology construction for technical domains', *9th European Knowledge Acquisition Workshop*, Berlin, Germany.
- Bodie, Z., Kane, A., and Marcus, A., 2004, *Essentials of Investments*, McGraw-Hill Irwin.
- Bourantas, D. and Papadakis, V., 1996, 'Greek Management: Diagnosis and Prognosis', *International Studies of Management And Organization*, 26, 3, pp. 13-32.
- Brewer, G.A. and Selden, S.C., 2000, 'Why elephants gallop: Assessing and predicting organizational performance in federal agencies', *Journal of Public Administration Research and Theory*, 10, 4, pp. 685-711.
- Bruckman, J.C., and Peters, S.C., 1987, 'Mergers and Acquisitions: The Human Equation', *Employment Relations Today*, 14, pp. 55-63.
- Budner, S., 1962, 'Tolerance for ambiguity scale', *Journal of Personality*, 30, 1, pp. 29-50.

- Calori, R., Johnson, G. and Sarnin, P., 1994, 'CEO's cognitive maps and the scope of the organization', *Strategic Management Journal*, 32, 2, pp. 437-457.
- Cammann, C., Fichman, M., Jenkins, D., and Klesh, J., 1979, 'The Michigan Organizational Assessment Questionnaire', Unpublished manuscript, Ann Arbor Michigan, University of Michigan.
- Cook, C.W., and Hunsaker, P.L., 2001, *Management and Organizational Behaviour*, McGraw-Hill, London.
- Cooper, R.K., 1997, 'Applying emotional intelligence in the workplace', *Training and Development*, 51, pp. 31-38.
- Cordery, J., Sevastos, P., Mueller, W., and Parker, S., 1993, 'Correlates of employee attitude toward functional flexibility', *Human Relations*, 46, 6, pp. 705-723.
- Crosson, S., Belverd N., and Powers, M., 2008. *Principles of accounting*, Houghton Mifflin, Boston.
- Cunningham, C.E., Woodward, C.A., Shannon, H.S. and MacIntosh, J., 2002, 'Readiness for organizational change: A longitudinal study of workplace, psychological and behavioural correlates', *Journal of Occupational and Organizational Psychology*, 75, pp. 377.
- Curren, M.T., and Harich K.R., 1994, 'Consumers mood states: the migrating influence of personal relevance on product evaluations', *Psychology and Marketing*, 11, 2, pp. 91-107.
- De Brabander, B. and Van Witteloostuijn, A., 1996, 'CEO locus of control and small firm performance: An integrative framework and empirical test', *Journal of Management Studies*, 33, 5, pp. 667-699.
- Demirguc-Kunt, A., and Detragiache, E., 1998, 'The Determinants of Banking Crises in Developing and Developed Countries', *IMF Staff Paper*, 45, 1, pp. 81-109.
- Downing, S.J., 1997, 'Learning the plot: emotional momentum in search of dramatic logic', *Management Learning*, 28, pp. 27-44.
- Doyle, P., 1994, 'Setting Business Objectives and Measuring Performance', *European Management Journal*, 12, 2, pp. 123-132.
- Eby, L.T., Adams D.M., Russell, J.E.A., and Gaby, S.H., 2000, 'Perceptions of Organizational Readiness for Change: Factors Related to Employees Reactions to the Implementation of Team-Based Selling', *Human Relations*, 53, 3, pp. 419-442.
- European Information Technology Observatory. 2011, *EITO Report 2011*, Bitkom Research GmbH.
- Eurostat, 2012, 'Gross domestic product at market prices', <http://epp.eurostat.ec.europa.eu>

- /portal/page/portal/national_accounts/data/main_tables.
- Facione, N.C., Facione, P.A., and Sanchez, C.A., 1994, Critical thinking disposition as a measure of competent clinical judgement: the development of the California Thinking Disposition Inventory', *Journal of Nursing Education*, 33, 8, pp. 345-350.
- Fasci, M.A. and Valdez, J., 1998, 'A performance contrast of male- and female-owned small accounting practices', *Journal of Small Business Management*, 36, pp. 1-7.
- Finkelstein, S. and Hambrick, D.C., 1996, *Strategic leadership: Top executives and their effects on organizations*, New York, West Publishing Company.
- Floyd, S., and Wooldridge, B., 1994, Dinosaurs or Dynamos: recognizing middle managements strategic role, *Academy of Management Executive*, 8, 4, pp. 47-57.
- Fredrickson, B.L., 1998, 'What good are positive emotions?', *Review of General Psychology*, 2, 3, pp. 300-319.
- Frith, J.R., 1998, 'Market orientation versus performance in minority and womanowned small business', *Proceedings of the Academy of Marketing Studies*, 3, pp. 6-19.
- Goldhar, J., and Lei, D., 1995, 'Variety is free: Manufacturing in the twenty-first century', *Academy of Management Executive*, 9, 4, pp. 73-86.
- Goleman, D., 1998a., *Working with Emotional Intelligence*, Bantam, New York.
- Goleman, D., 1998b., 'What makes a leader?', *Harvard Business Review*, 76, pp. 93-102.
- Gullkvist, B.M., 2013, 'Drivers of change in management accounting practices in an ERP environment', *International Journal of Economic Sciences and Applied Research*, 6, 2, pp. 149-174.
- Hackman, J.R., and Oldman, G.R., 1980., *Work redesign*, Addison Wesley, Reading.
- Hague, R.A., and Flick, L.F., 1989., 'Enduring involvement: conceptual and measurement issues', *Advances in Consumer Research*, 16, pp. 690-696.
- Hambrick, D.C. and Mason, P.A., 1984., 'Upper echelons: The organization as a reflection of its top managers', *Academy of Management Review*, 9, 2, pp. 193-106.
- Havlena, W., and Holbrook, M., 1986, 'The varieties of consumption experience: The role of emotions in consumer behaviour', *Journal of Consumer Research*, 13, 3, pp. 394-404.
- Hayashi, F., 2000, *Econometrics*, Princeton University Press.
- Higgs, M., and Rowland, D., 2002, Does it need emotional intelligence to lead change?,

- Journal of General Management*, 27, pp. 62-76.
- Hiller, N. and Hambrick, D., 2005, 'Conceptualizing executive hubris: The role of hyper-core self-evaluations in strategic decision-making', *Strategic Management Journal*, 26, pp. 297-319.
- Hitt, M. A, Keats, B. W. and DeMarie, S. M., 1998, 'Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century', *Academy of Management Executive*, 12, 4, pp. 22-42.
- Hofstede, G., 2001, *Cultures Consequences, Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, Sage Publications, Thousand Oaks.
- Holland, J.L., 1997, *Making vocational choices: a theory of vocational personalities and work environments*, Psychological Assessment Resources Inc, Odessa.
- Huber, G. and Glick, W., 1995., *Organizational Change and Redesign: Ideas and Insights for Improving Performance*, Oxford University Press.
- Inglehart, R., and Welzel, C., 2010., 'Changing mass priorities: the link between modernization and democracy', *Perspectives on Politics*, 8, 2, pp. 551-567.
- International Telecommunication Union., 2011, *ITU ICT Regulation Toolkit*.
- Iverson, R.D., 1996, 'Employee acceptance of organizational change: the role of organizational commitment', *The International Journal of Human Resource Management*, 7, 1, pp. 122-49.
- Johnson, G., and Scholes, K., 2002, *Exploring Corporate Strategy: Text and Case*, Prentice Hall International, London.
- Jones, D. and Kato, T., 2003, 'The Effects of Employee Involvement on Firm Performance: Evidence from an Econometric Case Study', *William Davidson Institute Working Paper*, 612, <http://dx.doi.org/10.2139/ssrn.445440>.
- Judge, T.A., Thoreson, C.J., Pucik, V., and Welbourne, T., 1999, 'Managerial coping with organizational change: a dispositional perspective', *Journal of Applied Psychology*, 84, PP. 107-122.
- Katsaros, K. and Nicolaidis, C., 2012, 'Personal Traits, Emotions, and Attitudes in the Workplace: Their Effect on Managers' Tolerance of Ambiguity', *The Psychologist-Manager Journal*, 15, 1, pp. 37-55.
- Katsaros K.K., Tsirikas, A. and Nicolaidis, C., 2014, 'Managers' workplace attitudes, tolerance of ambiguity and firm performance: the case of Greek banking industry', *Management Research Review*, 37, 5, pp. 442 - 465.
- Kaufman, B.E., 1999, 'Emotional arousal as a source of bounded rationality. *Journal of Economic Behavior and Organization*', 38, 2, pp. 135-144.

- Kerlinger, F.N., and Lee, H.B., 2000, *Foundations of Behavioral Research*, Harcourt College Publishers, Tort Worth.
- Kim, S., 2005, 'Individual-Level Factors and Organizational Performance in Government Organizations', *Journal of Public Administration Research and Theory*, 15, 2, pp. 245-261.
- Kirton, M.J., 1981, 'A reanalysis of 2 scales of tolerance of ambiguity', *Journal of Personality Assessment*, 45, pp. 407-414.
- Kotter, J.P., and Heskett, L., 1992, *Corporate Culture and Performance*, Free Press, New York.
- Kriegel, R., and Brandt, D., 1996, *Sacred cows make the best burgers*, Harper Business, Sydney.
- Lane, M.S., and Klenke K., 2004, 'The Ambiguity Tolerance Interface: A Modified Social Cognitive Model For Leading Under Uncertainty', *Journal of Leadership and Organizational Studies*, 10, 3, pp. 69 - 81.
- Langton, N., and Robbins, S., 2006, *Organizational Behaviour*, Pearson Prentice Canada, Toronto.
- Lascelles, D., and Dale, B., 1990, 'Quality Management: The Chief Executives Perception and Role. European Management Journal', 8, 1, pp. 67-75.
- Lau, C., and Woodman, R.C., 1995, 'Understanding organizational change: a schematic perspective', *Academy of Management Journal*, 38, 2, pp. 537-54.
- Lauriola, M., and Levin, I.P., 2001, 'Relating individual differences in attitude toward ambiguity to risky choices', *Journal of Behavioral Decision Making*, 14, pp. 107-122.
- Lazarus, R., 1991, *Emotion and Adaptation*, Oxford University Press, Oxford.
- Li, Y., Li, L., Liu, Y. and Wang, L., 2005, 'Linking management control system with product development and process decisions to cope with environment complexity', *International Journal of Production Research*, 43, 12, pp. 2577-91.
- Liu, Y., and Perrewé, P., 2005, 'Another look at the role of emotion in the organizational change: A process model', *Human Resource Management Review*, 15, 4, pp. 263-280.
- Locke, E.A., 1976, 'The nature and causes of job satisfaction', Dunnette M.D., *Handbook of industrial and organizational psychology*, Rand McNally, Chicago, pp. 1297-1349.
- Madsen S., Miller D., and Cameron J., 2005, 'Readiness for organizational change: do organizational commitment and social relationships in the workplace make a difference?', *Human Resource Development Quarterly*, 16, 2, pp. 213-234.
- Mamlin, N., Harris, K.R., and Case, L.P., 2001, 'A methodological analysis of research on locus of control and learning disabilities:

- rethinking a common assumption', *Journal of Special Education*, Winter.
- March, J.G., and Sutton R.I., 1997, 'Organizational performance as a dependent variable', *Organization Science*, 8, 6, pp. 688-706.
- May, T., Korczynski, M., and Frenkel, S., 2002, 'Organizational and occupational commitment: knowledge workers in large corporations', *Journal of Management Studies*, 39, 6, pp. 775-801.
- Mayer, J.D., and Salovey, P., 1997, *What is emotional intelligence?*, Salovey, P., and Sluyter, D., *Emotional Development and Emotional Intelligence: Educational Implications for Educators*, Basic Books, New York.
- McDonald, M.L., Westphal, J.D. and Graebner, M.E., 2008, 'What do they know? The effects of outside director acquisition experience on firm acquisition performance', *Strategic Management Journal*, 29, 11, pp. 1155-1177.
- McGregor, D., 1960, *The human side of enterprise*, McGraw-Hill, New York.
- McLain, D.L., 1993, 'The MSTAT-1: A new measure of an individuals tolerance for ambiguity', *Educational and Psychological Measurement*, 53, pp. 183-189.
- McNabb, D.E. and Sepic, F.T., 1995, 'Culture, climate, and total quality management: Measuring readiness for change', *Public Productivity and Management Review*, 18, 4, pp. 369-385.
- McQuarrie, E.F., and Munson J.M., 1991, 'A Revised Product Involvement Inventory: Improved Useability and Validity', *Advances in Consumer Research*, 19, pp. 108-115.
- Miller, D. and Toulouse, J.M., 1986, 'Strategy, structure, CEO personality and performance in small firms', *American Journal of Small Business*, 10, pp. 47-62.
- Miner, J.B., 1992, *Industrial-Organizational Psychology*, McGraw-Hill, New York.
- Morgan, D., 1994, 'Competitive Pressures Force Greek Entrepreneurs to Plan', *Long Range Planning*, 27, 4, pp. 112-124.
- Mowday, R., Steers, R., and Porter, L., 1979, 'The measurement of organizational commitment', *Journal of Vocational Behavior*, 14, pp. 224-247.
- Mowday, R.T., Porter, L.W., and Steers, R.M., 1982, *Employee-Organization Linkages: The Psychology of Commitment, Absenteeism, and Turnover*, Academic Press, New York.
- Mueller, D., 1990, *The Dynamics of Company Profits: An International Comparison*, Cambridge University Press, New York.
- Mumford, M.D., Marks, M.A., Connelly, M.S., Zaccaro, S.J., and Reiter-Palmon, R., 2000, 'Development of leadership skills: Experience and timing', *Leadership Quarterly*, 11, pp. 87-114.

- Murphy, G.B., Trailer, J.W., and Hill, R.C., 1996, 'Measuring performance in entrepreneurship research', *Journal of Business Research*, 36, pp. 15-23.
- Nadkarni, S. and Herrmann, P., 2010, 'CEO Personality, Strategic Flexibility, and Firm Performance: The Case of the Indian Business Process Outsourcing Industry', *Academy of Management Journal*, 53, 5, pp. 1050-1073.
- Nadkarni, S. and Narayanan V.K., 2007, 'Strategic Schemas, Strategic flexibility, and firm performance: The moderating role of industry clockspeed', *Strategic Management Journal*, 28, 243-270.
- Needles, B.E., Powers, M., and Crosson, S.V., 2007, *Financial and Managerial Accounting*, Houghton Mifflin, Boston.
- Nicolaidis, C., and Katsaros, K., 2010, 'Emotions towards Change: A case of Northern Greek ICT Industry', *International journal of business and economics*, 10, 1, 65-74.
- Nicolaidis, C., and Katsaros, K., 2011, 'Tolerance of ambiguity and emotional attitudes in a changing business environment: A case of Greek IT CEOs', *Journal of Strategy and Management*, 4, 1, pp. 44 - 61.
- Nicolaidis, C.S., 1992, 'Cultural determinants of corporate excellence in an integrated world economy: the impact of national cultures on organizational performance', Casson, M.C., *International Business and Global Integration: Some Empirical Studies*, MacMillan, London.
- Nicolaidis, C.S., and Michalopoulos, G., 2004, 'Empowerment in the Greek Banking Sector: an Exploratory Study', *Global Business and Economic Review-Anthology*, pp. 394-407.
- Oswald, S.L., Mossholder, K.W., and Harris, S.G., 1994, 'Vision salience and strategic involvement: implications for psychological attachment to organization and job', *Strategic Management Journal*, 15, 6, pp. 477-89.
- Ozcelik, H., Langton, N. and Aldrich, H., 2008, 'Doing well and doing good: The relationship between leadership practices that facilitate a possible emotional climate and organizational performance', *Journal of Managerial Psychology*, 23, pp. 186-203.
- Peter, J.P., and Olson, J.C., 2002, *Consumer Behavior and Marketing Strategy*, McGrawHill, Irwin.
- Peterson, R.S., Smith, D.B., Martorana, P.V., and Owens, P.D., 2003, 'The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance', *Journal of Applied Psychology*, 88, pp. 795- 808.
- Pfeffer, J., and Sutton, R.I., 2000, *The knowing-doing gap: How smart companies turn knowledge into action*, Harvard Business School Press, Boston.

- Rajagopalan, N, Spreitzer, GM., 1997, 'Toward a theory of strategic change: A multi lens perspective and integrative framework', *Academy of Management Review*, 22, pp. 48-79.
- Robinson, J.P., Shaver, P.R., and Wrightsman, L.S., 1991, 'Criteria for scale selection and evaluation', Robinson, J.P., Shaver, P.R., and Wrightsman L.S., *Measures of Personality and Social Psychological Attitudes*, Academic Press, San Diego.
- Rotter, J.B., 1975, 'Some problems and misconceptions related to the construct of internal versus external control of reinforcement', *Journal of Consulting and Clinical Psychology*, 43, pp. 56-67.
- Rudd, M.J., Greenley, G.E., Bearson, A.T. and Lings, N.I., 2007, 'Strategic planning and performance: Extending the debate', *Journal of Business Research*, 61, 2, pp. 999-1008.
- Russel, J., and Mehrabian, A., 1974, 'Evidence for a three-Factor Theory of Emotions', *Journal of Research Personality*, 11, 3, pp. 273-294.
- Savolainen, T.I., 1998, 'Managerial Commitment Process in Organizational Change: Findings from a Case Study', *Academy of Strategic and Organizational Leadership Journal*, 2, 2, pp. 1-12.
- Sawyer, J.E., 1990, 'Effects of risk and ambiguity on judgments of contingency relations and behavioural resource allocation decision', *Organizational Behavior and Human Decision Processes*, 45, pp. 85-110.
- Schweiger, D.M., and DeNisi, A.S., 1991, 'Communications with employees following a merger: a longitudinal field experiment', *Academy of Management Journal*, 34, 1, pp. 110-135.
- Spector, P., 1988, 'Development of the work locus of control scale', *Journal of Occupational Psychology*, 61, pp. 335-340.
- Spector, P., 1997, *Job Satisfaction: Application, Assessment, Cause and Consequences*, Sage Publications, London.
- Tan, J. and Peng, M., 2003, 'Organizational slack and firm performance during economic transitions: Two studies from an emerging economy', *Strategic Management Journal*, 24, pp. 1249-1264.
- Tegano, D.W., 1990, 'Relationship of tolerance for ambiguity and playfulness to creativity', *Psychological Reports*, 66, 3, pp. 1047-1056.
- Tiedens, L.Z., and Linton, S., 2001, 'Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing', *Journal of Personality and Social Psychology*, 81, 6, pp. 973-988.
- Tsirikas, A.N., Katsaros, K.K., and Nicolaidis, C.S., 2012, 'Knowledge management, tolerance of

- ambiguity and productivity: Evidence from the Greek public sector', *Employee Relations*, 34, 4, pp. 344-359.
- Vakola, M., and Nikolaou, I., 2005, 'Attitudes towards organizational change: What is the role of employees stress and commitment?', *Employee Relations*, 27, 2, pp. 160-174.
- Venkatraman, N., and Ramanujam, V., 1986, 'Measurement of Business Performance in Strategy Research: a Comparison Approaches', *Academy of Management Review*, 11, pp. 801-814.
- Viverita, L., 2008, 'The Effect of Mergers on Bank Performance: Evidence From Bank Consolidation Policy In Indonesia', *International Business Research Conference*, Dubai.
- Wall, S.J., 2001, 'Making mergers work', *Financial Executive*, 17, 2, pp. 34-35.
- Walsh, J.P., 1995, 'Managerial and organisational cognition: notes from a trip down memory lane', *Organization Science*, 6, pp. 280-321.
- Wanberg, C.R., and Banas, J.T., 2000, 'Predictors and outcomes of openness to changes in a reorganizing workplace', *Journal of Applied Psychology*, 85, pp. 132-142.
- Weber, P.S. and Weber, J.E., 2001, 'Changes in employee perceptions during organizational change', *Leadership and Organization Development Journal*, 22, pp. 291-300.
- Whetten, D., and Cameron, K., 1995, *Developing Management Skills*, College Publishers, Harper Collins.
- Wilkinson, D., 2006, *The Ambiguity Advantage: What great leaders are great at*, Macmillan, London.
- Wittenburg, K.J., and Norcross, J.C., 2001, 'Practitioner perfectionism: Relationship to ambiguity tolerance and work satisfaction', *Journal of Clinical Psychology*, 57, 12, pp. 1543-1550.
- Wong, C.S., and Law, K.S., 2002, 'The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study', *The Leadership Quarterly*, 13, 3, pp. 243-274.
- Wooldridge, J.M., 2013, *Introductory Econometrics: A Modern Approach*, Cengage Learning, Australia: South Western.
- World Economy Forum, 2011, *Networked Readiness Index 2010 - 2011*.

