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Does Environmental Uncertainty Moderate the Effects of Theory X and Theory Y Leadership Styles on Ambidextrous Innovation?

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Summary

This paper explores leadership-innovation ambidexterity relationship from the perspective of McGregor's Theory X and Y when faced with environmental uncertainty and further investigates which leadership attitude is more inclined to exploitative or explorative innovation and what the effect of perceived environmental uncertainty is. A two-page questionnaire was delivered to the owners and managers of 200 registered chandelier makers and lighting firms. The general finding of our study is that regardless of environmental uncertainty, among the ones we surveyed, the majority demonstrated Theory Y attitudes (50.9%). Again, 78.18% of the participants of the study perceived their business environment as highly uncertain. We found support to our assumption that perceived environmental uncertainty will result in a greater tendency to exhibit Theory X attitude by the Theory X managers/owners. Unexpectedly, similar results were also observed for Theory Y managers/owners under the same circumstances in which they are inclined to give up some of their Theory Y attitudes. The important point here is that their Theory Y point of view, not their attitude, still holds, and that change in attitude is due to the fear to "losing everything".

Keywords: Theory X and Theory Y, SMEs, Innovations, Uncertainty, Ambidextrous Innovations.

JEL Clasification: O43, O31, M21, M54

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Introduction

Organizations must learn to adapt to a rapidly changing business environment characterized by uncertainty and turmoil. Globalization and accessibility to goods and services are two environmental factors that may serve as the locus of such disturbances. The key to effective leadership in organizational adaptability is to create an innovative culture in the face of environmental uncertainty (Schmitt et al., 2010). While larger organizations possess the capabilities to adapt easily by creating structurally separate business units to focus on innovation, small to medium enterprises (SME) are generally hindered in this regard by insufficient resources. Rather, in the case of innovation, SMEs must rely on the skills and ambidextrous facilities of top management.

The innovative culture emerges from exploitation of existing competencies and exploration of novel innovations (Abidin et al., 2011). Lubatkin et al. (2006) define exploitation as a response "to current environmental conditions by adapting existing technologies and further meeting the needs of existing customers" (p.4) and exploration as "intended to respond to, as well as drive, latent environmental trends by creating innovative technologies and new markets" (p.4). Exploitative and explorative innovations, together referred to as ambidextrous innovations, work in the balance between these two competencies, bringing competitive advantage and sustainable profitability (Schmitt et al., 2010). How ambidexterity can be achieved has been explored extensively in the literature; (Chang et al., 2011; Lee et al., 2013; Rosing et al., 2011; Wei et al., 2011; Ferrary, 2011; Chang and Hughes, 2012; Tejada and Moreno, 2012; Selcer and Decker, 2012; Marrabelli et al., 2012; Fiset and Dostaler, 2013). However, a gap in the literature exists in how innovation ambidexterity can be achieved, particularly in relation to SMEs.

McGregor (1960) once claimed that organizations led by Theory Y leaders were innovative and creative; however, failure to innovate in most organizations led by theory Y leaders appeared both inevitable and "puzzling" (Senge, 1998, p.17). Rosing et al. (2011) argue that the overall relationship between leadership style and innovation remains unclear and adds "leaders for innovation" need to transition comfortably between complementary leadership behaviors. That is, "between reducing and increasing variance in follower behavior, adjusted to the current requirements of the innovation

tasks." This flexibility of leadership behaviors is referred to as "ambidextrous leadership because of its ability to foster ambidexterity in followers" (p.957). As one critical task of upper management in SMEs is to strike an effective balance between both operating and strategic roles continuously, their ability to foster ambidexterity in followers becomes challenging.

The effectiveness of leadership cannot be assessed in an isolated environment (Thomas and Bendoly, 2009). When studying the relationship between leadership styles and ambidextrous innovations it is instructive to consider the uncertainty of the environment as the moderator. In a European Commission Report (EIPC, 2012) it was shown that innovation by SMEs are the key factor in reducing the negative effects of the current economic crisis in Europe. The report highlights the importance of understanding the sources and patterns of innovative activity in the economy as a fundamental target for establishing more supportive policies. In contrast, Turkey's five-year plans since 1960 have emphasized similar policies, yet not necessarily for SMEs. Therefore, lack of support has forced SMEs to adapt to their environment without relying on governmental policies and this has helped them become more ambidextrous innovators. Due to the instability of the Turkish economy, SMEs have learned to survive with their instincts and keeping an ear to the ground, which is the need to pursue ambidextrous innovation regarding the environments. If the environment is dynamic, it is advisable to introduce exploratory innovations. Otherwise, exploitative innovations are generally appropriate, particularly in less competitive environments (Abidin et al., 2011). Although, recent changes by the government have targeted SMEs, personal interviews with some of the owners (n=10) before the main field study suggests that "old habits" are still what they are relying on when it comes to innovations.

In Turkey, SMEs are the most common form of business organizations, comprising 99,9% of all businesses, and generating about 77,8% of all jobs in the country (TUIK, 2012). In the management research literature, SMEs are largely overlooked primarily due to a lack of readily available data. Therefore, since SMEs are an engine of economic growth and employment (Uzkurt et al., 2012), we wanted to explore what innovative means they utilize in order sustain themselves over consecutive generations. The nature of SME owners/managers is that they are in close contact with their customer base, requiring quick adjustments to market deviations. Serving in both the

operational and strategic manager roles, they are close to innovative ideas for their respective sectors. This offers a distinct advantage that helps them perceive opportunities for both exploitative and explorative innovative ideas. However, when we discuss their leadership behavior from the perspective of McGregor's Theory X and Y, which were the most prevalent leadership styles in Turkey that we observed in our previous study of SME leadership (Arslan and Staub, 2012), we see that it is relevant to explore which style is more aligned with, respectively, exploitative and explorative innovation.

Thus, we pose the following research questions:

1. What's the demographic structure of chandelier makers and lighting firms' managers/owners' in terms of Theory X and Theory Y leadership styles?
2. In light of the recent economic downturn, how does environmental uncertainty influence Theory X and Theory Y owners/managers' innovation choice regarding ambidextrous, explorative and exploitative innovations?
3. Regardless of the influence by the environmental uncertainty, which leadership style, Theory X or Theory Y, is more prone to ambidextrous innovations?

1. Literature Review

1.1. Relationship between Leadership and Innovation

Leaders not only alter organizational processes but also strategically determine the organization's future direction. To successfully achieve this, an organization's capacity for innovation is accepted as the most critical variable; a key response mechanism which enables organizations to compete for success, even survive, as well as to operate under highly uncertain environmental conditions (Adams, 2003). The relationship between leadership and innovation has been broadly discussed in the literature (Krause, 2004; Jansen et al., 2009; Oke et al., 2009; Vaccaro et al., 2012). According to Shalley and Gilson (2004) the strength of the leader's impact on employee creativity relies heavily on the leader's influence on the place where the employees work. In other words, leaders shape the working climate that either enhances or hinders creativity.

Although ample studies exist between leadership style* and the likelihood of innovative success, the current situation regarding this relationship is somewhat complex and inconsistent (Rosing et al., 2011). The reason might be either the complex nature of innovation processes or the very broad nature of leadership styles that might both foster and hinder innovation (p.957). In general most researchers claim that leadership is one of the most influential predictors of innovation. Some authors argue that there is no use in studying stable leader traits and general leadership styles, a trend also observable in the general leadership literature. Rather, we should focus our attention on situational variability and flexible leadership behavior. Innovation requires temporally flexible leadership that incorporates individual followers, the specifics of the situation and the time and timing of leadership behaviours within the innovation cycle (p.957). Drawing on this perspective we also posit a similar point of view in that during times of stable environments and lucrative economic conditions, the owners/managers of SMEs will more likely exhibit Theory Y behaviours. However, in periods of economic downturn and uncertainty, the likely outcome will be sacrificing from the dominant attitude and manifestation of Theory X like behaviours.

Additionally, Rosing et al. (2011, p.958) found positive corrected and weighted mean correlations for transformational leadership, initiating structure, Leader-Member Exchange (LMX) and supervisor support; transformational leadership producing the highest correlation and supervisor support being involved in the lowest correlation. Likewise consideration, participative leadership, and non-controlling leadership seem to be positively related to innovation as well, despite some evidence in the literature of negative correlations. These heterogeneous results may imply that while some leadership behaviours are related to innovations, in other contexts the same leadership behaviours seem to have no relation at all. The probable explanation is the existence of different moderator variables as well as different pathways that led the same leadership behaviours to dissimilar results (p.965).

In a study of public organizations in the United States, Damanpour and Schneider (2006) found that innovation adoption, organizational characteristics, and upper management attitudes toward innovation evidenced a stronger influence than the environment or demographic characteristics

* The words "style", "attitude", and "behaviour" are used interchangeably throughout the paper.

of high-level leaders. The effectiveness of leadership, according to Bledow et al. (2011), is subject to the degree of functionality of a leader's behavior "in stimulating and balancing the activities underlying innovation" (p.4). De Jong and Den Hartog (2007) investigated the way in which leaders may enable and enhance individual innovation behaviour. Based on previous research suggesting that employee innovative behaviour depends generally on interaction with others at work, they claim that the leader is the most powerful source of influence on employees, and innovation behaviour is no exception. The authors identified 13 leader behaviour constructs that seem to impact not innovative behaviour but new idea generation as well.

1.2. Ambidextrous Innovations and Leadership

The Merriam-Webster dictionary describes "ambidexterity" as using both hands with equal ease. The term has been adopted by management and organizational scholars and used in the forms of "ambidextrous organizations," "ambidextrous leadership," and "ambidextrous learning." Earlier studies of ambidexterity in business innovation focused on the organization. Organizational ambidexterity, first used by Duncan (1976), requires organizations to use both exploration and exploitation techniques to be successful. Development of organizational ambidexterity theory drew greater focus in the 2000s by Birkinshaw and Gibson and Raisch. Their research centered on building ambidexterist organizations (Birkinshaw and Gibson, 2004), antecedents, outcomes, and moderators (Raisch and Birkinshaw, 2008) and mediating (Gibson and Birkinshaw, 2004) in ambitexterist organizations. Exploration and exploitation were originally defined by March (1991) as two forms of organizational learning. To that extent Simsek (2009) looked at ambidexterity in organizations from the multilevel perspective and clarify some of the literature that were unfocused and limited due to a lack of more encompassing conceptual efforts. Rosing et al., (2011) built their study on these by, remarking that leaders for innovation need to switch flexibly between complementary leadership behaviors. These leadership behaviors are complementary because each of them corresponds to innovation requirements that the other ones are not able to meet. The word innovation, on the other hand, is defined through a multidimensional perspective, either empirically or conceptually, such as organizational innovation, newness, innovation

management, innovation as interactive model, and types of innovation ("radical or incremental") (Abidin et al., 2011, p.66). In order to overcome the challenge of increasingly complex competitive environments, efficiency alone might not suffice. Organizations also need radical, discontinuous innovations (O'Reilly III and Tushman, 2004). This can only be achieved by combining exploitative and explorative innovation strategies. Exploitative innovations are described as "the leveraging of existing capabilities through activities such as refinement, efficiency, selection, and implementation," while explorative innovations indicate "efforts to create future capabilities by means of search, variation, experimentation, and discovery" (Schmitt et al., 2010, p.129). An exploitative innovation deals with efficiencies of existing products and services, while explorative innovations are based on developing products and services for new markets (Schmitt et al., 2010). Although interrelated, both affect existing processes, structures, strategies, and cultures that differ substantially in organizations. O'Reilly and Tushman (2013) looked in to the future of ambidexterity research by evaluating past and present research. Their findings support that future studies need to focus on not only the firm and firm context level, but also to the leaders in these organizations.

Rosing et al. (2011) and Abidin et al. (2010) explain ambidexterity in terms of the balance between explorative and exploitative organizational strategies. Although the term itself is not new to organizational science, it is novel in incorporating leadership. By extending the concept of ambidexterity to leadership, they coined the term "ambidextrous leadership" (Rosing et al., 2011, p.966). Based on a comprehensive literature review, they found positive relationships between some leadership styles and innovation. Another perspective (Dover and Dierk, 2010) deserving attention regards the manager's role as exploitative, the leader's role as ambidextrous, and the entrepreneur's role as exploratory. Some studies, however, describe the role of management as "to orchestrate the knowledge assets such that the most appropriate orientation (exploitative/exploratory/ambidextrous) is achieved to obtain the required organizational results" (Turner et al., 2013, p.328). Some researchers (Chang and Hughes, 2012) also point to the studies regarding structural ambidexterity and contextual ambidexterity that found support on leadership's role as a critical factor in enabling innovation ambidexterity. Moreover, research into the topic of ambidexterity is still in its infancy (Brion et al., 2010; Chang et al., 2011) and there is

evidence of performance increase when adopted and managed properly by firms regardless of their size and sector. According to Chang and Hughes (2012, p.1) "scholarly efforts to resolve the ambidexterity question have left a disproportionate gap in our understanding of how innovation ambidexterity can be achieved, particularly so in small-to-medium-sized firms".

1.3. Linking Theory Y Leadership to Innovativeness:

Although it has been argued that Theory Y leadership envisions people to have the capacity to display a high degree of imagination, ingenuity, and creativity in solving problems (McGregor, 1960), we additionally speculate on the effect of Theory Y leadership style on employee's innovativeness through empowerment and autonomy. The literature of employee empowerment is proliferated with positive relationships between empowerment-performance and empowerment-creativity. According to Gill (2011) the link between certain leadership styles and empowerment goes back to the early period of leadership studies such as McGregor's Theory Y, Likert's 'new patterns of management', Herzberg's job enrichment, Hackman and Oldham's Job Characteristics Model, and the Quality of Working Life movement of the 1970s. Empowerment also captures two aspects of Bass's model of transformational leadership; individualized consideration and intellectual stimulation. Similarly Wilson (2012) emphasizes the enhanced and positive relationship between Theory Y leaders and employee empowerment in organizations (p.72). Carson (2005; p.259) praises McGregor's work and points its Theory Y concept relatedness to self-directed work teams, self-management, job enrichment, and empowerment. By pointing out its connection to organizational renewal and performance Kinlaw (1995:2) argues that its roots goes back to Douglas McGregor's description of Theory Y in his book The Human Side of Enterprise. In a meta-analytic study by Seibert et al. (2011:983), empowerment is considered as the key to innovation behavior at work due to its "active, persistent, and change oriented behaviors associated with" it. Although sometimes confused with empowerment, autonomy seems to play an important role too. Here, autonomy can be associated with self-directedness and self-management, in other words freedom of the employees to decide how, when, and with whom to work (West and Farr, 1989 as cited in Hammond et al., 2011). In their meta-analytic study, Hammond et al. (2011; p.30) found that among all the predictor categories, job characteristics, particularly autonomy, seem to reflect "the most consistent

and strongest positive relationship with creativity and innovation". Similar view is held by Bass and Bass (2008) that state effective autonomy generally leads to innovation. Therefore we propose here a similar point of view and underline that Theory Y managers/owners may enhance the innovativeness of their employees through either encouraging autonomy or empowering.

1.4. Linking Theory X Leadership to Innovativeness

On the other hand, given the general negative connotation of Theory X leadership and its association with autocratic leadership, it is very likely to expect a negative relationship with innovations. But still, there are some contradicting studies, though very rare, that report enhanced innovative behavior during the interplay between higher innovative climate and autocratic behavior (Leung and Morris, 2012). Even in some studies it is noted that a suitable context and autocratic leadership may indeed be effective in accomplishing organizational goals (Bass and Bass, 2008). Likewise De Hoogh et al. (2015) found evidence regarding positive effect of autocratic leadership on morale and performance provided that the environment is predictable and secure. These ideas may hold true only when autocratic leadership interacts with a strong innovative climate, and provides "clarity and motivation for the employees for their being innovativeness" (Leung and Morris, 2012; p. xx). In our study, when Theory X managers/owners feel less perceived environmental uncertainty, we expect them to encourage their employee towards innovativeness, even to ambidextrous innovation. However, it should be kept in mind that when compared to Theory Y managers/owners ambidexterity, the magnitude is expected to be significantly lower.

Hence, due to the very nature of autocratic leadership that avoids risk taking, it is also likely that owners/managers prone to Theory X leadership attitude may prefer exploitative innovations (less risky) more than ambidextrous innovations. Thus, following hypotheses are proposed;

H1. Regardless of environmental uncertainty, Theory Y managers/owners will report more ambidextrous innovations than Theory X managers/owners.

H2. Regardless of environmental uncertainty, Theory X managers/owners will pursue more exploitative innovations than Theory Y managers/owners.

1.5. Perceived Environmental Uncertainty and Theory Y and Theory X Leadership

Could a Theory Y manager/owner change his/her general attitude when they are confronted with uncertainty in their environment? For example, when challenged by a crises, could they panic and for the sake of control, could they display more Theory X attitudes? Or could they embrace uncertainty more and stay calm thus, keep what they doing they know is best? Meanwhile, could environmental uncertainty cause Theory X owners/managers to act more cautious and less risk-taking behavior, thus pursuing more exploitative innovations which seem less risky?

Uncertainty makes organizations more sensitive and fragile to external impacts. Additionally "environments perceived as highly uncertain will likely be viewed as very risky, whereby a few erroneous decisions could result in severe trouble, and possibly risk the survival of the organization" (Waldman et al., 2001; p.12). Being as one of the weak psychological situations, uncertainty can lead to "greater discretion" and can cause circumstances for the leaders to "express their personality and behavioral inclinations" (p.12) where they can take decisions and actions that reduces risks. Additionally the uncertainty concept in terms of environment has been well defined and discussed. For example, by drawing on the relevant literature Freel (2005;50) argues the existence of three types environmental uncertainty and by what is meant with "perceived environmental uncertainty" he concludes, is a subjective point of view – the subjectivity reflected through the state of mind of decision makers – "and with subjective estimates of the risk of disappointment" (Penrose, 1995, p. 58 as cited in Freel, 2005). Furthermore, these subjective perceptions are conceived as more important than the real environment and the decisions are made accordingly. Likewise, the degree of complexity and uncertainty is contingent upon the inability to grasp the direction of the environment, the possibility of its effect on the organization, and the success of any particular responses to the environment (Waldman et al., 2001).

Although earlier research on leadership was based on trait theories and held the idea that changes might hardly occur, later studies proved otherwise and that through interventions (Avolio et al., 2009) as well as by their environment (Rowitz, 2014) leadership could be changed. Based on these two approaches, considering the uncertainty in their environment

as an intervention, and by drawing on the similarities between situational leadership theories which argues that the leadership is task-relevant and that leaders should adapt themselves to the changes in their organizations (Rowitz, 2014), it may be plausible to expect that the managers/owners who display Theory Y leadership styles could encourage their employees to engage into less ambidextrous innovations to avoid the risks. Thus, they may try to adapt to the uncertainty by sacrificing a bit from their dominant style of leadership.

Some scholars (e.g. Schmitt et al., 2010) on the other hand, by attributing environmental uncertainty in terms of economic crisis, argue that in the event of scarce resources, firms tend toward a short-term focus, aiming for visible and quick returns (regarding future costs and benefits), and operating through exploitative innovations rather than through explorative innovations. Therefore, these circumstances may even force firms to implement more standardization, centralization, conservatism, and rigidity by hindering information sharing, participation, long-term planning, and innovativeness (Schmitt et al., 2010). During times of high uncertainty, organizational leaders may tend to exert more control and centralized decision-making due to the necessity for expedited innovation and production processes. This is analogous to an ancient Roman tradition when, in a time of crisis, the consuls would temporarily (e.g. for six months) appoint a dictator to deal with the problems and speed up the decision-making process. Similarly, Ensley et al. (2006) posited that in dynamic environments, ownership is most likely the key that unifies top management teams towards a common goal, whereas top management teams without an ownership stake tend to be more fragmented by the individual agendas of their members. In other words, depending on the dominancy of their leadership, either Theory Y or Theory X, owners tighten the grip of their managers, and managers tighten their subordinates' grips to be more inward focus; i.e. towards exploitative innovations. It should be kept in mind here is that even under high perceived uncertainty and regardless of leadership types, any kind of innovation is vital for survival which may be correct for both types of leaderships.

Waldman et al. (2001) argue that perceived environmental uncertainty, as a strong moderator variable, affects the relationship between charismatic leadership and organizational performance in a positive way. Ensley et al. (2006) used environmental dynamism as a moderator variable as well, but

they found that, in contrast to Waldman et al. (2001), the effectiveness of transactional leadership is determined by low environmental dynamism whereas the effectiveness of transformational leadership is determined by high environmental dynamism. Uzkurt et al. (2012) and his colleagues' study of environmental uncertainty and its impact on innovation in Turkish SMEs approached it from this perspective. Their research shows that SME firms in Turkey face high technological and market/ demand turbulence or uncertainties, that they experience higher levels of firm innovativeness, and these tend to force firms to constantly assess and adopt new solutions for their businesses. This in turn generates opportunities for innovative breakthroughs in products or processes. They also found that when a Turkish SME is facing uncertain and complex external environments, it is likely that the internal mechanisms are poised for greater innovativeness. Thus, following hypotheses are proposed;

H3: Environmental uncertainty moderates the relationship between Theory Y and ambidextrous innovations in such that; Theory Y owners/ managers will pursue more ambidextrous innovations when they perceive low environmental uncertainty and less or no ambidextrous innovations when they perceive high environmental uncertainty.

H4: Environmental uncertainty moderates the relationship between Theory X and ambidextrous innovations in such that; Theory X owners/ managers will pursue ambidextrous innovations lesser when they perceive low environmental uncertainty; even lesser or none when they perceive environmental uncertainty as high.

2. Methodology

2.1. Participants

In this study, we focused on the Small-Medium chandelier and lighting businesses of the Şishane region of Istanbul. Şishane is an inner-city area in Istanbul with its own cultural heritage and many of the original families of the chandelier and lighting businesses. Şishane has been the central location for chandelier craftsmen in Turkey since the Ottoman Empire, with some firms in existence today whose origins date back to this era. Recently, however, increasing competition from so-called "big box" chains coupled

with the growing availability of inexpensive, low-quality Chinese products have exerted considerable pressure on these smaller firms. In addition, the Şishane area is bordered by Istiklal Street, a neighborhood which is one of the primary tourist attractions in Istanbul, well known for its energetic night life. The touristic area has been slowly encroaching on the Şişhane district, which has resulted in a squeezing out of the chandelier industry in this area. Despite these formidable challenges, the firms have demonstrated an ability to sustain their existence and growth through innovative approaches. Although the majority of these firms are transplanting manufacturing to various locations around Istanbul, a significant percentage still maintain their retail operations in Şişhane and continue to thrive. Although the sampling seems local and representing only the Marmara Region in general, the population of Istanbul, reached to 17 million in total, is greater than a lot of countries in Europe. Additionally, the general revenue of these SMEs has increased to such an amount that has even caught up the rest of the SMEs in the same sector throughout the whole country.

Today, there remain 200 registered chandelier makers and lighting firms in this small, historic district (personal communication, the Chamber of Chandelier Makers, 2012). The participants in this study were 110 Small-Medium chandelier and lighting businesses in the Şishane region of Istanbul.

2.2. Sampling and Data Collection

A two-page questionnaire was prepared and hand delivered to the owners and managers of 200 registered chandelier makers and lighting firms in the district. The first section of the questionnaire consisted of demographics as well as items regarding financial performance such as annual turnover rate, and ambidexterity (exploitative and explorative innovations) as well as the impact of any innovation in relation to expenses. The ambidexterity items were also dichotomous like the most of the questionnaire accept the demographics. And to help the respondents to understand the distinction between exploitation and exploration, additional and detailed information as well as examples were provided.

The second section of the questionnaire was the Theory X and Theory Y attitude scale (Kopelman et al., 2010) which was translated into Turkish.

And then back translated to confirm that the right verbiage was used. The scale incorporates a total of 26 Theory X/Y attitudes; "13 were reflective of a Theory X mindset (e.g. "Most employees will try to do as little work as possible") and 13 reflected a Theory Y mindset (e.g. "The average person can be trusted"). The third and the final section consisted of six criteria to measure the impact of perceived environmental uncertainty. All the items were dichotomous (i.e., Yes/No and Agree/Disagree).

From December 2012 to February 2013, 200 questionnaires were hand delivered to the stores in the district of Şişhane. Out of 200 questionnaires distributed, 110 were returned which corresponds to a 55 % response rate. For the background check, descriptive statistics were utilized and for the proposed relationships, cross tabulation and logistic regression with Johnson-Neyman conditional effects were conducted. As for the validity-reliability tests, a freely available software called "Factor9.3" was used.

2.3. Descriptive Statistics

Among the 110 respondents, 49 (45%) consider themselves of the Leader X type whereas the remainder, 61 (55%), identify themselves as Theory Y type. A thorough analysis of the descriptive statistics provides more information regarding the background of the SMEs that have been examined. The dominance of Theory Y type is apparent in the youngest group (19.09%); as for the Theory X type, we observed intensity for the 41-50 age group (16.36%). Theory X type owners consist of mostly 2nd generation (19.09%); on the other hand Theory Y owners are mostly represented by the youngest generation (22.73%). As for the managers, Theory Y type seems more prevalent (16.36%). The smallest SMEs in terms of employee numbers reflect the most crowded groups for both of the leader types (X: 21.82%; Y: 19.09%). Considering the job experience, worded as manager tenure, the majority who consider themselves as Theory Y type is concentrated in 1-5 years (9.09%) and who consider themselves as Theory X type is concentrated in 6-10 years (9.09%). For both leadership types, the ownership duration is between 11-20 years (13.64% each). Lastly, for both leadership types, the scale of annual turnover seems to be greater than 250.000 TL.

Table 1 Descriptive Statistics of the Demographics of the Sample

		LEADER_TYPE				
		X		Y		Total
Age Group	20-23	10	9,09%	21	19,09%	31
	31-40	16	14,55%	13	11,82%	29
	41-50	18	16,36%	17	15,45%	35
	51-60	3	2,73%	10	9,09%	13
	61-70	2	1,82%	0	0,00%	2
Total		49	44,55%	61	55,45%	110
Position	Gen I	14	12,73%	25	22,73%	39
	Gen II	18	16,36%	12	10,91%	30
	Gen III	5	4,55%	5	4,55%	10
	> Gen III	2	1,82%	1	0,91%	3
	Manager	10	9,09%	18	16,36%	28
Total		49	44,55%	61	55,45%	110
Number of Employees	1-5	24	21,82%	21	19,09%	45
	6-10	6	5,45%	13	11,82%	19
	11-15	6	5,45%	15	13,64%	21
	16-20	7	6,36%	3	2,73%	10
	>21	6	5,45%	9	8,18%	15
Total		49	44,55%	61	55,45%	110
Manager's Tenure in yrs	<1	0	0,00%	3	2,73%	3
	1—5	2	1,82%	10	9,09%	12
	6—10	6	5,45%	5	4,55%	11
	11—20	2	1,82%	1	0,91%	3
Total		10	9,09%	19	17,27%	29
Ownership in yrs	1—5	9	8,18%	9	8,18%	18
	6—10	7	6,36%	10	9,09%	17
	11—20	15	13,64%	15	13,64%	30
	>21	8	7,27%	8	7,27%	16
Total		39	35,45%	42	38,18%	81
Annual Turnover	<100.000	4	3,64%	9	8,18%	13
	100.001-250.000	6	5,45%	10	9,09%	16
	250.001-500.000	16	14,55%	13	11,82%	29
	500.001-1.000.000	12	10,91%	20	18,18%	32
	>1.000.001	11	10,00%	9	8,18%	20
Total		49	44,55%	61	55,45%	110

2.4. Analyses and Results

2.4.1. Scale Validity and Reliability

Due to the dichotomous nature of the scale accept the demographic questions; we employed polychoric correlation analysis to confirm the validity and reliability. It is asserted that unlike Product-moment, Spearman's rho, and Kendall's tau, "the polychoric correlation procedure was found to provide the most accurate estimates of pairwise correlations and factor loadings" (Babakus, Ferguson, and Jöreskog, 1987 as cited in Maroco, 2009, p.9). SPSS and similar Windows based software are incapable of calculating this type of analysis, thus, we downloaded a freely available computer program from the Rovirai Virgili University's website called "Factor9.3" for these calculations (Baglin, 2014).

After omitting 5 items due to low loadings, the analysis of the remained 21 items yielded a two-factor solution that accounted for 42% of variation. Each factors accounted for 21% of the item variance. The two factors had good reliabilities too (0.80 for each). As for the perceived environmental uncertainty scale, one item was omitted. And with the 4 items, the analysis yielded a one-factor solution that accounted for 58% of variation. The reliability of this scale was 0.75.

2.4.2. Results

Before testing hypotheses we checked the relationships among the variables. Table 2 displays means, standard deviations, and intercorrelations.

Table 2 Means, standard deviations, and intercorrelations

	N	M	SD	1	2	3
1. Ambidexterity (1=No, 2=Yes)	110	1,56	,50	1,00		
2. Theory Y (Sum)	110	7,46	2,43	,41**	1,00	
3. Theory X (Sum)	110	7,54	2,52	-,19*	-,54**	1,00
4. Env Uncert (Sum)	110	6,24	1,76	,23*	,25*	,095

Spearman's rho
Correlation is significant at the 0.01 level (2-tailed).**
Correlation is significant at the 0.05 level (2-tailed).*

Because of the dichotomous nature of the dependent variable, we run Spearman's rho correlation analyses. There seems a moderate significant correlation between dependent variable (ambidextrous innovation) and the first independent variable (Theory Y) (r=.41; p<.01) and a negative but small significant correlation between dependent variable (ambidextrous innovation) and the second independent variable (Theory X) (r=-.19; p<.05). Lastly, the moderator variable (environmental uncertainty) was significantly correlated with the dependent variable (ambidextrous innovation) (r=.23; p<.05) and with the first independent variable (Theory Y) (r=.25; p<.05). However, it was not correlated with the second independent variable (Theory X).

In order to test the first and the second hypotheses, a cross tabulation analysis was carried out. A cross tabulation is a joint frequency distribution required when associations of two or more categorical variables will be analyzed with chi-square statistics (χ 2). Additionally this statistical procedure is mostly recommended as the optimal procedure in the event that frequency data are presented (Slate and Rojas-LeBouef, 2011, p.10). The results are shown in Table 3.

Table 3 Crosstabs Results (Pearson Chi-Square)

			Innovation Types			
	Exploit		Explore		Ambidex	
Theory X (n=54)	**19***	**70%**	13	57%	22	37%
Theory Y (n=56)	8	30%	10	43%	**38***	**63%**
Total	27	100%	23	100%	60	100%

* $p < 0.05$.

According to the analysis, independent from environmental uncertainty, Theory Y managers/owners have reported more ambidextrous innovations (63%) than Theory X managers/owners (37%) and Theory X managers/owners are pursuing more exploitative innovations (70%) (χ2=9.12, p=0.01) The effect size for this finding, Cramer's V, was moderate, 0.29 (Cohen, 1988). Thus, hypotheses 1 and 2 are accepted.

2.4.2.1. Moderation Analysis and the Results of Hypotheses 3 and 4

It was hypothesized that environmental uncertainty would affect both types of leadership styles. However, for Theory Y, in low environmental uncertainty, it was expected that they would report more ambidextrous innovations; whereas for Theory X, we expected lesser ambidextrous innovation reporting, even lesser when environmental uncertainty was perceived as high.

First a logistic regression analysis with moderation was conducted in SPSS with a macro (v2.13) developed by Hayes (2013). Logistic regression is recommended for multivariate procedures that describe and test relationships between a dichotomous outcome variable and a number of categorical and/or continuous variables (Peng et.al., 2002). The results are displayed in Table 4.

Table 4 Logistic Regression and Mediation Analysis

Dependent variable: Ambidextrous Innovations (1=No, 2=Yes)						
	B	SE	Wald *x2*	*p*	Exp(B)	
constant	-13,13	4,33	9,21	0,00**	0,00	
Y_SUM	1,60	0,56	8,04	0,00**	4,93	
X_SUM	0,06	0,10	0,30	0,59	1,06	
ENV	1,54	0,59	6,71	0,01*	4,67	
interact(Y_SUM x ENV)	-0,18	0,08	5,46	0,02*	0,83	
interact(X_SUM x ENV)	0,05	0,05	0,73	0,39	1,05	
n=110;	-2LL=122,47	Model LL=29,11		CoxSnell=0,23	Nagelkrk=0,31	

** p <.01, * p<.05

Table 5 Classification Table

		Predicted			
		AMBIDEXTERITY			Percentage Correct
Observed		NO	YES	TOTAL	
AMBIDEXTERITY	NO	34	16	50	68%
	YES	13	47	60	78,30%
TOTAL		47	63	110	73,60%

As shown in Table 5, the overall correct prediction rate is fairly good, at 73,6%. The correct prediction rate for ambidexterity reporting is about 78.3%

and 68% for no reporting. The results of the logistic regression analysis revealed a significant relationship between one the first predictor variable (Theory Y) and the outcome variable in the model (Wald $\chi 2 = 8.04$, $p < .01$). As for the second predictor variable (Theory X), there is no significant relationship (Wald $\chi 2 = 0.30$, $p > .05$).The omnibus test indicated an overall significant model ($\chi 2$ (2, N=110) = 29.11, $p < .01$). In other words, SMEs led by managers/owners with a Theory Y attitude were more innovative in terms of ambidexterity. The Cox and Snell R^2 and the Nagelkerke R^2 values were.23 and.31 respectively.

Table 6 Conditional Effect of Focal Predictor at Values of Moderator Variable

ENV	*B*	SE	Wald	*p*	LLCI(b)	ULCI(b)
2,00	1,23	0,41	8,93	0,00**	0,42	2,04
2,35	1,17	0,39	9,14	0,00**	0,41	1,92
2,70	1,10	0,36	9,38	0,00**	0,40	1,81
3,05	1,04	0,33	9,64	0,00**	0,38	1,70
3,40	0,98	0,31	9,93	0,00**	0,37	1,58
3,75	0,91	0,28	10,25	0,00**	0,35	1,47
4,10	0,85	0,26	10,60	0,00**	0,34	1,36
4,45	0,78	0,24	10,97	0,00**	0,32	1,25
4,80	0,72	0,21	11,33	0,00**	0,30	1,14
5,15	0,66	0,19	11,65	0,00**	0,28	1,03
5,50	0,59	0,17	11,82	0,00**	0,25	0,93
5,85	0,53	0,15	11,69	0,00**	0,23	0,83
6,20	0,46	0,14	11,02	0,00**	0,19	0,74
6,55	0,40	0,13	9,56	0,00**	0,15	0,65
6,90	0,34	0,12	7,33	0,01*	0,09	0,58
7,25	0,27	0,13	4,75	0,03*	0,03	0,52
7,38	0,25	0,13	3,84	0,05	0,00	0,50
7,60	0,21	0,13	2,51	0,11	-0,05	0,47
7,95	0,14	0,14	1,02	0,31	-0,14	0,43
8,30	0,08	0,16	0,26	0,61	-0,23	0,39
8,65	0,02	0,18	0,01	0,92	-0,33	0,36
9,00	-0,05	0,20	0,06	0,81	-0,43	0,34

** $p < .01$, * $p < .05$

The moderation analysis (interact=Y_SUM x ENV) yielded significant but negative outcome (Wald $\chi 2 = 5.46$, $p < .05$) for the first predictor variable (Theory Y) but not for second predictor variable (interact=Y_SUM x ENV) (Wald $\chi 2 = 0.73$, $p > .05$). If the coefficient is negative, then it indicates that the effect of independent variable on dependent decreases as moderator goes from 0 to 1 (Kenny, 2013). To verify if the moderator interacts as hypothesized, Johnson-Neyman test should be utilized. Hayes' (2013) macro MODPROBE does this automatically. The results are presented in Table 6. Hayes (2013;239) postulates that the Johnson-Neyman technique is being used for probing interactions particularly in moderation analyses. It gives the advantage to estimate the conditional effects of *independent variable* and it is only applicable to continuous moderators. Johnson-Neyman technique identifies the value or values within the measurement range of the moderator, and yields a "*a nonsimultaneous inference*" where "any chosen value of M in the region of significance, the probability of incorrectly concluding the conditional effect of X on Y is different from zero when it is not is no greater than α" (p.241). Here, this inference value is 7,38 for the moderator variable. This means that all the values below that point are significant and within that range which also represent the lower environmental uncertainty perceived by these Theory Y managers/owners, they are dealing with ambidextrous innovations more (78,30%). When the perceived uncertainty increases (as moderator goes from 0 to 1), the effect of independent variable (Theory Y) on dependent (Ambidextrous innovation) decreases. Thus, this gives us the data to accept the hypothesis 3. Whereas for hypothesis 4, we could not find any support.

3. Discussion

Innovation is a "vital" as well as a "challenging managerial responsibility" that requires complex knowledge of management processes (Andriopoulos and Lewis, 2009, p.696). To create new or improved products or services, it is important to identify and utilize ideas, tools, and opportunities. The essence of survival depends on how effectively firms excel at both exploitative and exploratory innovations (Jansen et al., 2005). In this regard, among many ideas, tools and opportunities, leadership plays an important role. Miles (2007, p.197) denotes this issue as "the challenge of how to get

the innovation-supporting leadership values and organizational practices into the mainstream of management and firm behavior". Through a similar point of view, Crowther (2010) criticizes leadership's obsession with "order" and sees the future of leadership and organizations in innovation even disregarding the disorder, provided that it enables processes for higher levels of innovation. If organizations want to become more innovative, one way for realizing this is to utilize their employees' ability to innovate (de Jong and Den Hartog, 2007). It is the leaders who have the skills to influence employees' innovative behaviors through certain but deliberate actions that may inspire idea generation and applications provided "by their more general, daily behavior" (p.41). McGregor (1960) once said that Theory Y managers see people having the capacity to apply a high degree of imagination, ingenuity, and creativity in solving problems. This can be attained by focusing on the nature of relationships and by creating an environment where Theory Y managers may inspire their employees to commit to organizational objectives, "while allowing them to exercise initiative, ingenuity, and self-direction" (p.64). Supportive leaders and flexible managers are often seen as drivers of innovations, e.g. innovation ambidexterity (Chang and Hughes, 2012). Consistent with the aforementioned ideas, some even go further by interrelating individual innovation ambidexterity among top managers with the organization itself, positing that "firms can over time become reflections of their top managers" (Hambrick and Mason, 1984 as cited in Chang and Hughes, 2012, p.6).

The strength of this study is twofold. Our study provides support on bipolarity of McGregor's leadership styles. This means that either owner or manager, and albeit the dominancy of one attitude towards the other, both leadership attitudes seem to co-exist. Which attitude becomes more prominent depends on to what extent they perceive their environment as uncertain. Earlier studies agreed that McGregor's leadership theories might have paved the way for the development of the situational theories and that these self-assumptions of leaders' and managers' might not have "translated into action" (Rowitz, 2014; p.19). However, this study, for the first time found empirical evidence about the transition stated above and refuting the latter preposition of not being to be translated into action. Second, the broad literature of leadership is rich with data that attests positive

relationship between innovation and certain leadership styles particularly in bigger organizations (Love and Roper, 2015). And unlike exploration of other leadership styles, little empirical research has been conducted on McGregor's Theory X and Theory Y and the impact of these leadership skills on ambidextrous innovation in environmental uncertainty, particularly for the small business owners. For that reason, we believe that this paper makes a number of important contributions to the existing leadership literature. Our research was also designed to further our understanding of how leadership can foster an organizational context that stimulates innovation ambidexterity. Thus, with this research, we investigated the effect of Theory X and Theory Y leadership attitudes of SMEs managers/owners on ambidextrous innovations and the ways in which environmental uncertainty moderates this relationship.

The chandelier and lighting businesses and their tradesmen are still intact and present a unique opportunity to display traditional skills. Interviews with a sample of chandelier and lighting business owners (n=10) indicates that their special skills and products not only help them survive against the big box firms, but also creates a distinct market for high-end tourists and individuals with professional interests. With the considerable expansion of the construction industry, due to recent government policies on upgrading aged buildings for more earthquake-resilient ones, special orders from across the country have led to a significant increase in sales over the last 10 years. A substantial portion of this growth comes from targeting orders for residential and commercial interiors from architects, interior designers and private and corporate clients in the highly profitable restoration and conservation sectors, where expertise in old technologies is waning in most western countries or in the development of novelty products where traditional skills know-how combined with available modern technologies and added-value of creativity results in the low to medium volume production of high-end design products. Aiming at markets beyond their locally accessible client base also allows the SMEs of Şishane to upgrade their skills via product innovations for not only national, but also international markets. The expansion of their market and products increases the awareness from the government and thus creates new opportunities manifested as financial, quality employment and R&D support.

Limitations and Further Research

The focus of our study was solely on the organizational level; we deliberately spared details of the individual employee level and instead, presumed that the place created by Theory Y managers/owners would contribute to the innovation climate of the organization and the endeavors to innovation ambidexterity in a competitive sector. However, the suggestions made by de Jong and Den Hartog (2007) to study leadership practices which may be related to employee idea generation and/or application behavior, and the contingency factors that may influence the leadership-innovative behavior connection in different types of firms are worth to pursue. Previous studies on employee innovative behavior indicate that interaction with others in the workplace has great significance and considering that the "leaders have a powerful source of influence on employees' work behaviors" (p.42) this could suggest an opportunity for further research. Future research could also examine the effect of firm-related demographics such as size, age and, industry characteristic on the relationships among Theory Y and Theory X and innovation ambidexterity.

It would also beneficial to analyze the reaction of SMEs to high uncertainty and competitive intensity in addition to innovation ambidexterity. Some studies (e.g., Uzkurt et al., 2012) anticipate situations where increased innovativeness may not be the only reaction of the firms. For example, other responses such as price wars, marketing expenditure, and increased customer relationship tactics could be more prevalent due to difficulties in accessing financial support, such as government incentives. Just as Uzkurt et al., (2012, p.17) call for "a more careful study and analysis" for assessing "the most appropriate responses in situations when competitive intensity increases," the effect of leadership styles (e.g. Theory Y and Theory X) should also be incorporated.

E. Dinh et al. (2014:p.50) criticize the so-called "simplistic, outcome-oriented perspective of leadership" as depicted by fundamental attribution theories, and worry about the potential weakness of this view to overemphasize the role of leaders. To put it simple, the success or failure of organizations cannot be ascribed to a one person. Furthermore, given the complex and dynamic nature of todays' organizations where many interdependent units

interact, leader flexibility and shared leadership, "changing from one instance to the next as individuals experience different affective states and cognitive cues" are of essence (p.44). It is also possible that "different leadership skill sets and systems may be needed to effectively manage these different processes". When it comes to perform well as a leader under uncertainty and in complex environments, Snowden and Boone's (2009) leadership perspective is also worth mentioning here. Their view challenges traditional approach to leader-decision making dyad by complexity science. The main characteristic of complexity is that complex phenomena arise from simple rules. In today's complex environment leaders needs to maneuver their decision making through conscious thought. Likewise, Kurtz and Snowden (2003) disapprove the conventional wisdom that holds the leadership as a replicable practice in well-structured organizations and in stable conditions. On the contrary, they admit that the lack of order is inevitable and "not necessarily a bad thing" (p.464). By applying "Cynefin Framework" (consists of four domains; complex, knowable, chaos, and known) to leadership, they argue that different contexts may require a more adoptable styles of leadership. Similarly, Uhl-Bien et. al (2007) framed the complexity issue and leadership through "Complexity Leadership Theory"; a leadership paradigm that focuses on enabling the learning, creative, and adaptive capacity of complex adaptive systems" (p.314). According to their research, this framework "reflects a dynamic relationship between the bureaucratic, administrative functions of the organization and the emergent, informal dynamics of complex adaptive systems" (p.299). The assertion (de Hoogh et al., 2004) that uncertain environments may call for new interpretations, novel responses, and different levels of effort and investments, sometimes leads to exhibitions of multiple cases for leaders demonstrating flexible decisions and plentiful opportunities.

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