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Relationships between Leadership Perceptions and Attitudes towards Innovativeness: A Research in a Technopark in Istanbul

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Abstract *Leadership has always been a noteworthy issue since ancient times and there are many historical instances that pinpoint its vast effects on the history of humanity. As time passes by, everything changes and this fact is also veridical for leadership research. Currently, there are innumerable paradigms about leadership, some of which overarch classical conventional leadership approaches. It is striking that some paradigms and ideas mark contemporaneousness and technology via innovativeness and this is exactly the matter, which is considered by the author of this study. Put other way, this study questions the place of innovativeness with regards to leadership. This questioning is performed by means of data collected from high technology businesses in a prominent techno park in Turkey. Participants are the top managers of these businesses and are asked to express their attitudes about innovativeness and their perceptions about their own leadership features. Obtained results demonstrate that the participants are aware of innovativeness, they believe that they have a bifold leadership feature, and their leadership feature and attitudes towards innovativeness are inter-related.*

Key words Innovativeness, leadership, technopark

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1. Introduction

Though leadership's importance is well known since the earliest times of mankind, scientific interest has flourished since the last decade. For the present, leadership is a subject with an enormous literature. There are many paradigms regarding leadership and various studies use each, some, or all of these paradigms with the intention to find out facts about this subject.

Just like other scientific issues, leadership literature is alive and evolving. Instead of the more conventional leadership paradigms such as transactional (Bass 1990), or transformational (Howell and Avolio 1993) leadership, contemporary research exerts some zeal to find out facts about relatively newer paradigms; spiritual (Fry 2003) and innovation (Lindgren 2012) leadership, for instance.

As innovation is a key success component in contemporary business environment, its scientific scrutinizing becomes important, with one point in mind: it has to be led (Oke 2007). This is the reason why the literature claims that innovation management should be considered as a leadership process (Aragon-Correa *et al*., 2007; Elenkov and Manev 2005). There are also some advanced suggestions in the literature such as integrating innovativeness within leadership as a natural component (Suciu *et al*., 2010), or utilizing innovation leadership (Nonaka and Kenney 1991).

From this point of view, literature questions the place of innovativeness in relation to leadership. This study not only wishes to contribute to this questioning, but also to the very few related studies in Turkey (e.g. Mogulkoc 2009; Ayranci 2011)

2. Literature review

Leadership, which has been attributed to many issues such as personality traits (Stogdill 1948), behaviors (Lewin 1939) or situations (Fiedler 1978), has always been a matter of interest among humans. Ancient times involve many leaders and leadership instances in various settings such as religion (Beausay

2009; Blenkinsopp 1995), politics (Bauman 2002; Sally 2002), soldiership (Carney 2004; Van Wees 2009), culture (Kosambi 1965; Wilson 2013), and economy (Finley 1999).

With the intensifying scientific interest in leadership, the 19th (e.g. Galton 1869; White 1893) and the inception of the 20th (e.g. Blackmar 1911; Mumford 1906) centuries testify many scientific studies. Currently, leadership domain hosts countless studies that emphasize not only the already mentioned settings, but also many others such as sports (Chelladurai and Saleh 1980), media (Mathes and Pfetsch 1991), innovation (Carmeli *et al.,* 2010), education (Birnbaum and Edelson 1989), fashion (Goldsmith *et al.,* 1993), and business (Bjerke 1999). A more complexion issue is that various studies facilitate from many leadership paradigms, from more usual ones like transactional (Bass 1990), transformational (Howell and Avolio 1993), visionary (Westley and Mintzberg 1989) and charismatic (Stoker *et al*., 2001) leadership paradigms to newer and unorthodox approaches such as authentic (Walumbwa et al. 2008a), shared (Lambert 2002), strategic (Vera and Crossan 2004), servant (Spears 2004), spiritual (Fry 2003), and innovation (Lindgren 2012) leadership styles.

Intricacy, formed by the variability of settings and paradigms, prevents researchers from reaching to a general consensus regarding the effectiveness and benefits of leadership. The case with business context is, on the other hand, different. Literature generally points out that leadership, despite using different approaches (e.g. Voegtlin *et al*., 2012) in business context, is usually beneficial for many business-related outcomes including job satisfaction (Braun et al. 2013); organizational commitment (Kent and Chelladurai 2001); organizational citizenship behavior (Podsakoff *et al.,* 1990); motivation (Henderson 1995); inspiration (Kerfoot 2001); collaboration (Waugh and Streib 2006); performance at individual (Walumbwa *et al*., 2008b), group (Jung and Avolio 1999) and organizational (Fiedler and Garcia 1987) levels; communication (Hackman and Johnson 2013), organizational learning (Vera and Crossan 2004), and innovation (Rosing *et al*., 2011).

What underlying mechanisms enable these benefits is a question, generally asked by researchers. Although there are profoundly variable answers, results obtained generally imply that the participative nature within some leadership paradigms (e.g. Nadler and Tushman 1990) is one of the key components.

This component is posited to be very effective if leadership and innovativeness relationship in business context is in question. Innovativeness, which is the capability of thinking or acting uniquely by and large (Lee and Mano 2014; Salavou 2004), requires a participative environment in order to let workers contribute with their original ideas and solutions (Olson *et al.,* 1995). According to the literature, paradigms such as strategic (Elenkov *et al.,* 2005), transformational (Jung *et al*., 2003), and servant (Yoshida *et al*., 2014) leadership styles exactly offer this type of environment and therefore involve workers in goal-setting and visioning processes of leadership. Though there is a phenomenal number of studies that consider leadership-innovativeness relationship by means of leadership's participative nature, outcomes indeed acknowledge the participative nature's role (Nadler and Tushman 1990; Nonaka and Kenney 1991).

Another noteworthy point about leadership-innovativeness relationship is that innovativeness may also be used by the leader. From this standpoint, the leader could use authenticity to come up with better solutions for problems (Bryant 2003) while inspiring followers towards the tasks and goals (Eyal and Kark 2004). Scrutinizing in the literature indeed confers that leader's authenticity is effective on followers (Jung *et al*., 2003).

A follow-up idea is that innovativeness should not only be an option for the leader, it should be an integrative part of any leadership (Deschamps 2003). Therefore, any leader should provide promotion to foster followers' innovativeness (Burpitt and Bigoness, 1997; Suciu *et al*., 2010) and combine own social skills with this promotion to unify followers with the objectives and the organization (Deschamps 2003), while simultaneously wielding own innovativeness for problem-solving (Pihie and Bagheri 2013).

Another idea going beyond integrating innovativeness into leadership is to use innovation leadership. Innovation leaders enhance workers' innovation capabilities by promoting a suitable environment or actively coaching (Norrgren and Schaller 1999), and they encourage workers to take some risks for and show commitment towards innovation process (Saleh and Wang 1993), In brief, innovation leaders are the facilitators of the innovation process in the business (Nonaka and Kenney 1991).

Shortly, the literature suggests that there are relationships between leadership and innovativeness by means of three distinct possibilities. One possibility is the use of participative approach towards followers that is an already integrative component of many leadership styles. Another possibility is the

leader's facilitation of own innovative resources, whereas this possibility is advanced by the idea of integrating innovativeness as a natural component of leadership. The last possibility shows a greater emphasis on innovativeness: using a distinct style such as innovation leadership.

A review of Turkish literature, unfortunately, reveals that leadership-innovativeness connections have not been thoroughly analyzed in Turkish business context. There are in fact very few Turkish studies and their general conclusion is that leadership is effective to foster innovativeness at individual (e.g. Ayranci 2011; Mogulkoc 2009; Senturk *et al*., 2016) and organizational (e.g. Gumusluoglu and Ilsev 2009) levels.

3. Methodology of research

3.1. Aim, Sample and Data Collection

As mentioned earlier, innovation is a contemporary subject and carries significance importance for businesses. It necessitates to be led, thus it needs leadership practices of business managers. Successful practices could be exerted only if managers have the required leadership skills and perceive themselves as leaders. Success, however, does not solely depend on skills and perception; it also needs managers' appropriate caring about innovativeness. The author assumes that the care could be represented by attitudes towards innovativeness. Briefly, a successful innovation implementation is expected to be affected by the relationship between managers' leadership skills and perceptions, and their approach to innovativeness. This relationship is aimed to be tested except for skills.

Participants are the top managers of high technology businesses in one of the most prominent technoparks of Turkey, Teknopark İstanbul. Currently, there are 141 active businesses operating in high technology area (Teknopark İstanbul, 2016) and all top managers are expected to participate.

Questionnaires are used to collect data, and a professional consulting firm is used to administer questionnaires. A list of participants containing their names and contact information is also obtained from this firm. The author thereafter checks with the participants to approve proper administration of questionnaires.

Questionnaires are composed of two parts. The first part includes leadership orientation instrument, formed by Luthans (1995) while the second part covers attitudes towards innovativeness, measured by instrument used by Ayranci (2011) in Turkish context. The items in these instruments are checked and some rewordings are made for better clarification of meanings.

3.2. Findings about Statistical Structures

When the list of participants and filled questionnaires are checked, it is observed that there are 112 participants out of the 141 expected (79,4%). Explanatory factor analyses with varimax rotations and suppression of factor loadings smaller than |0,5| yield a two-dimensional structure for leadership perceptions (Table 1) and a three-dimensional structure for attitudes towards innovativeness (Table 2). These tables also present reliability analyses' results.

Table 1. Statistical structure and reliabilities of leadership perceptions

	Task Orientation (TAO)	**People Orientation (PEO)**
KMO Value	**0,868 (Bartlett's test value is statistically significant)**	
Variance Explained (%)	***33,621***	***26,447***
Cronbach's Alpha Value	***0,912***	***0,863***
I usually decide what to do and how to do tasks in the business by myself. (TO1)	0,955	
I want my methods to be used for problem solving. (TO4)	0,932	
I encourage the use of specific technical methods. (TO5)	0,926	
I want my workers to obey industry-specified rules and arrangements. (TO2)	0,921	

I want my workers to work more enthusiastically. (TO3)	0,863	
I foster productivity by offering rewards and bonuses to my workers. (TO6)	0,834	
I usually listen to and consider my workers' business ideas. (PO3)		0,877
I usually consult some of my specific workers before acting. (PO2)		0,821
I relieved empower some of my specific workers. (PO1)		0,742
I mostly trust my workers regarding their contributions to the business. (PO5)		0,726
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
Rotation converged in 4 iterations.		

Table 1 posits the existence of two main leadership dimensions. While task orientation is about the emphasis on tasks rather than the workers by means of leader's dictations about tasks and their methodologies, insistence on obeying established methods and rules, demand for more enthusiasm of workers, and better productivity; people orientation involves a consideration of workers' business-related ideas, worker consultation, empowerment, and trust towards workers.

The next subject, attitudes towards innovativeness, is scrutinized and Table 2 expresses that it is a tripartite structure.

Table 2. Statistical structure and reliabilities of attitudes towards innovativeness

	Merit (M)	**System (S)**	**Intuitive Creativity (IC)**
KMO Value	**0,788 (Bartlett's test value is statistically significant)**		
Variance Explained (%)	**33,522**	**21,568**	**16,832**
Cronbach's Alpha Value	***0,927***	***0,903***	***0,812***
I can continuously insist on seeking out solutions to grueling problems. (M2)	0,935		
I choose fairness rather the acclaim of other people. (M3)	0,908		
Success can only be achieved through hard work. (M1)	0,901		
Self-respect has a much greater privilege than other people's respect. (M5)	0,874		
I can easily reject stakes or other benefits if they coincide with my goals. (M4)	0,825		
I claim that systematic working is the best approach for achievement. (S3)		0,912	
I act step by step to find solutions of problems. (S2)		0,893	
I check my steps thoroughly when I am chasing success. (S1)		0,881	
When dealing with problems, it is important to keep consistency. (S4)		0,874	
Being tidy is an important success factor. (S5)		0,856	
I can sometimes act in an unconventional way for problem-solving. (IC3)			0,874
I am interested in new approaches and ideas rather than using the usual approaches and ideas. (IC4)			0,819
I think that sometimes asking wrong questions may serve to find right solutions. (IC1)			0,802
I sometimes trust my intuition to solve problems. (IC2)			0,796
Asking questions without absolute answers may be useful to foster better solutions. (IC5)			0,763
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
Rotation converged in 4 iterations.			

As per Table 2, attitudes towards innovativeness depend on three components. Merit emphasizes participants' insistence on problem-solving and achieving success, self-respect and fairness. System component directly involves the need for a systematic approach, consistency and tidiness, whereas intuitive creativity refers to newness and unconventionality, and use of intuition in problem solving process.

3.3. Findings about Relationships

As the statistical structures of leadership perceptions and attitudes towards innovativeness are found out, the author checks for the relationship between these two subjects. This scrutinizing is carried out by means of structural equation modeling, and the relationship in question is given in Figure 1.

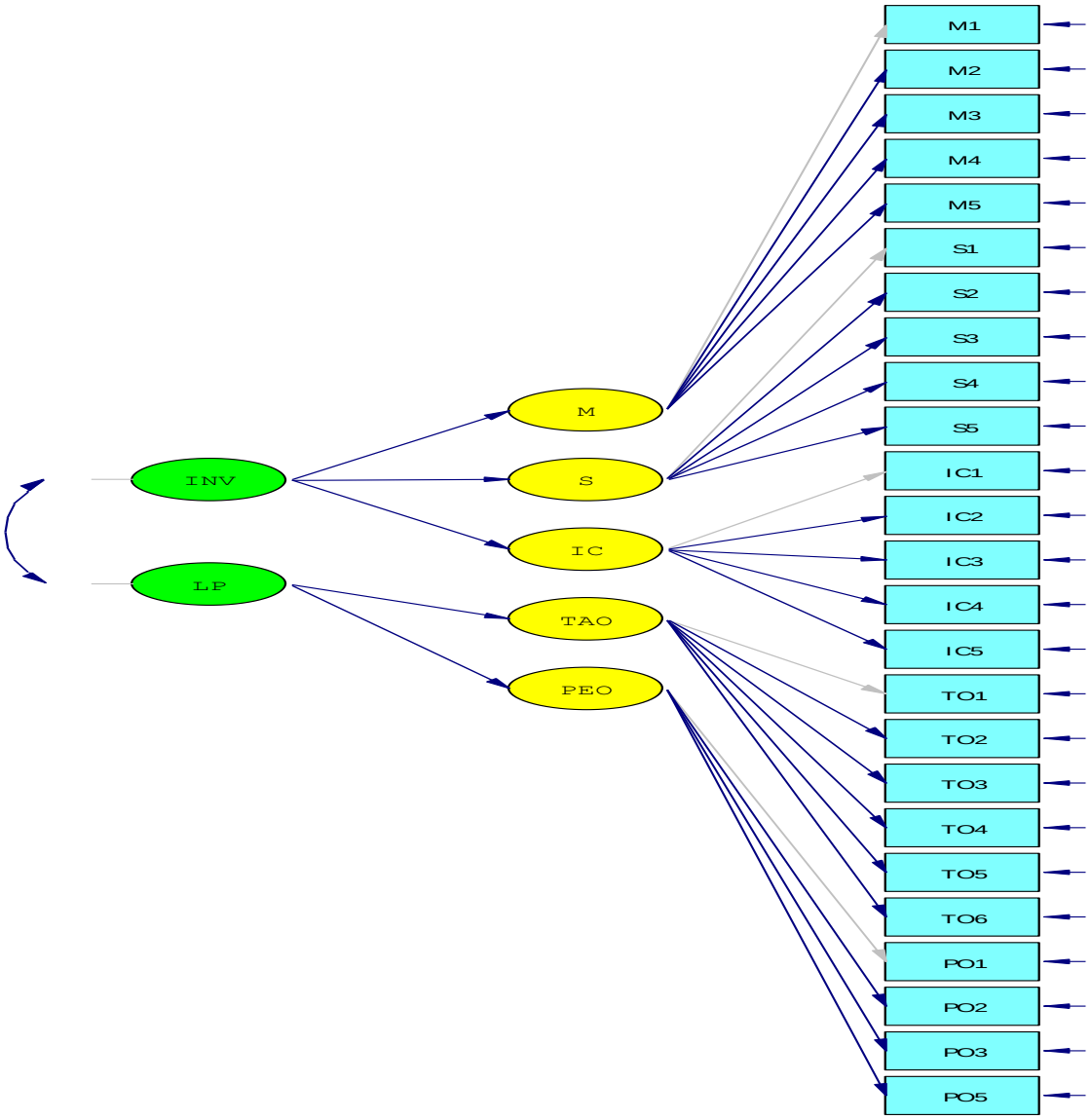

Figure 1. The relationship model to be tested

(INV: Attitudes towards innovativeness; LP: Leadership perceptions; Other abbreviations can be found in Tables 1 and 2).

An analysis of this model aggregately shows that the model is realistic when fit indices are checked (Table 3).

Table 3. Fit indices of the relationship model

Fit Indice	Value
Goodness of Fit Index (GFI)	0,97
Adjusted Goodness of Fit Index (AGFI)	0,95
Parsimony Goodness of Fit Index (PGFI)	0,91
Comparative Fit Index (CFI)	0,96
Incremental Fit Index (IFI)	0,94
Relative Fit Index (RFI)	0,94
Root Mean Square Error of Approximation (RMSEA)	0,10
Root Mean Square Residual (RMR)	0,054
Standardized RMR	0,091

The model's error distribution in Figure 2 also denotes its realism.

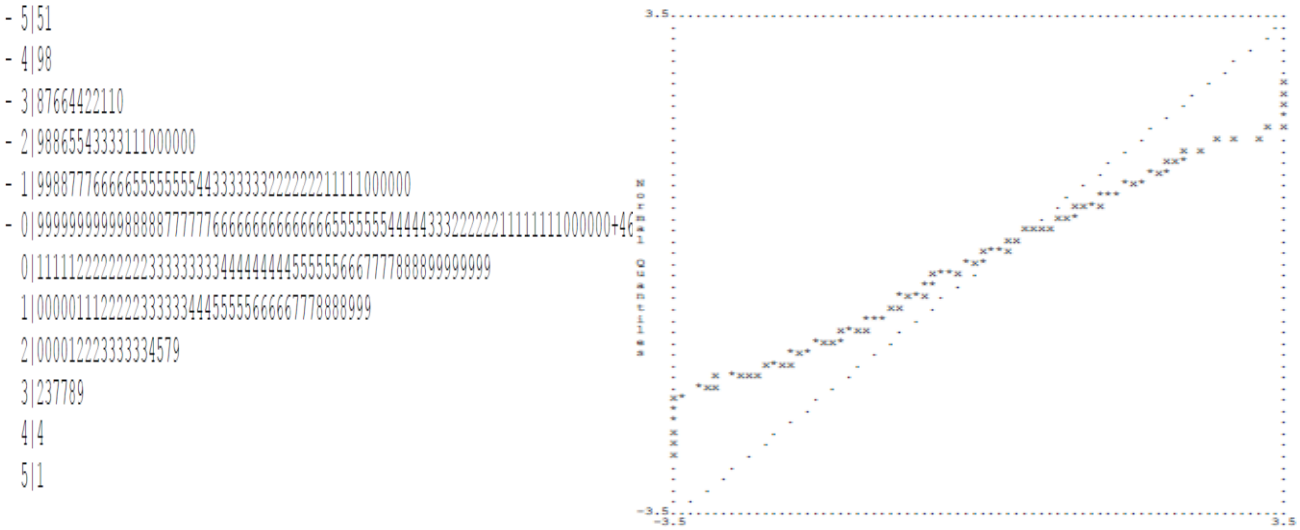

Figure 2. Model's error distribution

Table 4. Relationships regarding leadership perceptions

	Coefficient	t-value	R^2
Relationships at latent variable level			
Leadership Perceptions – Task Orientation (TAO)	-0,27	-7,45	0,51
Leadership Perceptions – People Orientation (PEO)	0,50	7,50	0,25
Relationships at variable level			
Task Orientation (TAO) - I usually decide what to do and how to do tasks in the business by myself (TO1)	1,08	-	0,74
Task Orientation (TAO) - I want my workers to obey industry-specified rules and arrangements. (TO2)	0,99	27,18	0,60
Task Orientation (TAO) - I want my workers to work more enthusiastically. (TO3)	0,90	26,67	0,53
Task Orientation (TAO) - I want my methods to be used for problem solving. (TO4)	0,74	24,81	0,54
Task Orientation (TAO) - I encourage the use of specific technical methods. (TO5)	0,89	26,76	0,47
Task Orientation (TAO) - I foster productivity by offering rewards and bonuses to my workers. (TO6)	0,79	25,58	0,49
People Orientation (PEO) - I relievedly empower some of my specific workers. (PO1)	0,98	-	0,76
People Orientation (PEO) - I usually consult some of my specific workers before acting. (PO2)	0,75	13,06	0,44
People Orientation (PEO) - I usually listen to and consider my workers' business ideas. (PO3)	0,78	12,87	0,54
People Orientation (PEO) - I mostly trust my workers regarding their contributions to the business. (PO5)	0,63	12,82	0,36

Table 4 pinpoints an important outcome; task orientation has a negative relationship with leadership perceptions. In other words, the participants perceive themselves to be more people-oriented leaders. All items contribute positively and moderately to their components.

This time, Table 5 reveals the relationships regarding attitudes towards innovativeness and a noteworthy point is that all relationships are statistically significant.

Table 5. Relationships regarding attitudes towards innovativeness

	Coefficient	t-value	R^2
Relationships at latent variable level			
Attitudes towards Innovativeness – Merit (M)	0,33	11,63	0,11
Attitudes towards Innovativeness – System (S)	0,43	7,75	0,19
Attitudes towards Innovativeness – Intuitive Creativity (IC)	0,24	11,26	0,31
Relationships at variable level			
Merit (M) - Success can only be achieved through hard work. (M1)	0,63	-	0,60
Merit (M) - I can continuously insist on seeking out solutions to grueling problems. (M2)	0,44	4,62	0,50
Merit (M) - I choose fairness rather the acclaim of other people. (M3)	0,51	4,81	0,34
Merit (M) - I can easily reject stakes or other benefits if they coincide with my goals. (M4)	0,47	4,82	0,43
Merit (M) - Self-respect has a much greater privilege than other people's respect. (M5)	0,61	5,06	0,60
System (S) - I check my steps thoroughly when I am chasing success. (S1)	0,83	-	0,63
System (S) - I act step by step to find solutions of problems. (S2)	0,71	11,59	0,68
System (S) - I claim that systematic working is the best approach for achievement. (S3)	0,75	11,39	0,54
System (S) - When dealing with problems, it is important to keep consistency. (S4)	0,57	10,41	0,37
System (S) - Being tidy is an important success factor. (S5)	0,57	10,49	0,36
Intuitive Creativity (IC) - I think that sometimes asking wrong questions may serve to find right solutions. (IC1)	0,36	-	0,31
Intuitive Creativity (IC) - I sometimes trust my intuition to solve problems. (IC2)	0,44	2,07	0,35
Intuitive Creativity (IC) - I can sometimes act in an unconventional way for problem-solving. (IC3)	0,58	1,95	0,55
Intuitive Creativity (IC) - I am interested in new approaches and ideas rather than using the usual approaches and ideas. (IC4)	0,44	2,08	0,25
Intuitive Creativity (IC) - Asking questions without absolute answers may be useful to foster better solutions. (IC5)	0,59	2,07	0,52

According to Table 5, the three components contribute to attitudes towards innovativeness positively via weak connections. All items have positive relationships with their respective components as expected, and most connections are moderate.

The main concern of the research is taken into account in Table 6; it shows that participants' own leadership perceptions and their attitudes towards innovativeness have a strong and positive correlation. This is the acknowledgement of the literature.

Table 6. Relationship between leadership perceptions and attitudes towards innovativeness

	Leadership Perceptions	Attitude towards Innovativeness
Leadership Perceptions	**1,00**	0,89 (0,04) 6,60
Attitude towards Innovativeness	0,89 (0,04) 6,60	**1,00**

4. Results and conclusions

Technology and innovation are one of the key success factors today. Beside innovation's technical side, it has to be led successfully. Leading success is dependent on many aspects some of which involve fostering creativity, facilitating a participative environment, providing motivation, and empowerment. With these in mind, this study finds out some related facts.

High technology businesses need innovation naturally as an integral part of their operations. In this case, the question is how this innovation is led, and thus these businesses' top managers are required to perform leadership actions. This requirement may be met if these managers are aware of leadership practices and perceive themselves as leaders. This study deals only with the perception side of the issue at hand. Results indicate that the top managers agree to have leadership capabilities and these capabilities are divided into two mainstreams: task orientation and people orientation. While both are found out to contribute to own leadership perception, top managers assert that task orientation has a negative contribution. This is an implication that they suggest leadership to be more people-oriented. This implication has coherence with the literature as innovation is posited to flourish greatly on the grounds that the leader encourages followers' freedom and empowerment.

If top managers are to exert leadership towards innovation, then another issue to be considered is their own perceptions about innovativeness. Results point out a tripartite structure including top managers' merit for success, fairness, and respect; system that consists of systematic acting with consistency; and intuitive creativity that involves newness and use of intuition and unconventionality. All these three components are detected to have a positive contribution to the perception.

When considered via an integrative relationship model, the final result unveils those top managers' own leadership perceptions and attitudes towards innovativeness have a very strong and positive relationship. It is also striking that innovativeness cannot be merged into leadership perception, it can solely be related. This final result is in congruence with the literature, albeit with a small difference. The literature suggests the existence of a unilateral relationship – leadership affects innovativeness. This time, reciprocal relationships are found and the reason is believed to be related to the participants. The participants, top managers, evaluate their own leadership feature and their attitudes towards innovativeness. It is understood that they connect their own perceptions with their own attitudes.

Future studies could add other variables such as distinctions among different leadership styles, innovation types, and organizational differences into the research. There may also be comparisons among different contexts such as business types, sectors, or countries. Data may also be collected from workers to evaluate their approach to innovativeness and their ideas about top managers' leadership feature. There may also be research regarding multiple levels of management to find clues about leadership perceptions and innovativeness. Briefly, this research domain could be more rigorously scrutinized.

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