

## Pro-active leadership for innovation: recommendations for top management teams

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### Keywords

Leadership, innovation capability, Top Management Teams (TMTs)

### Abstract

*As organizations grow in size and scale of operations, they also tend to become more complex and difficult of manage. During such phases, a key responsibility of Top Management Teams (TMTs) is to provide a clear vision and robust support to the organizational members towards new opportunities for growth and progress for everyone. One foolproof way to ensure long-term growth is to continuously invest in 'Innovation'. Innovation requires a combined effort from all members of the organization, irrespective of their hierarchy. A brilliant idea that can change the future of an organization can come from any person, from any corner of an organization. Hence, managing innovation requires dedicated effort and team-work. The ability of the organisation to create such dedicated teams which have the ability to transform creative ideas to products, is the 'new' source of competitive advantage of an organization. Organizations which continuously invest in cultivating a creative and learning environment are steadily building their capabilities for long-term innovation and hence, ensuring their long-term survival and growth. This requires aligning the short-term tactical goals of various teams and team-members to be aligned to the strategic long-term goals of the organization. Top Management Teams play a key role in 'aligning' their teams towards innovation through the right kind of 'Vision', 'Support' and 'Resource allocation'.*

*An online questionnaire was employed to garner responses from R&D teams belonging to public-funded research laboratories throughout India. A five-point 'Likert' scale was used to measure the perception of the researchers about their respective teams on aspects related to innovation (manifestation and customer-focus) and three sub-dimensions of leadership (vision, support and resource allocation). Independent samples t-test was used to compare responses on the basis of nature (academic and industrial), size of organization (small or large) and age (young or experienced) research teams. Results reveal that R&D teams vary from each other on aspects such as (1) existence of the word 'innovation' in the organization's vision statement (2) team receiving awards/ recognition at national/global level (3) close association with customers while product development (4) customer's willingness to pay 'extra' for 'added' features. Top Management Teams (TMTs) should keep these aspects in mind while designing organizational level policies aimed towards encouraging and enabling innovation within their organizational settings. 'Proactive Leadership' towards innovation is the key.*

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### Introduction

Hi-tech organizations constantly compete against each other in terms of quality, quantity and speed of developing and deploying new products or services. Technology plays a key role in enabling such organizations to 'execute' their strategies and help them achieve competitiveness. Needless to say those organizations are required to continuously invest in conceptualizing and developing 'new technologies' in their quest to be the best. It requires organizations to create products that are not just significantly novel but also commercially successful. This demands a 'strategic focus' towards new technologies and an in-depth understanding about the target markets. This strategic focus can help an organization to build 'long-term capabilities' to innovate successfully. It is important for organizations to realize that their 'value offerings' are not just technologically innovative but also 'commercially' successful.

It is imperative for R&D teams to have an in-depth market orientation to understand the commercial impact of their technological developments. It is imperative to say that R&D teams should be closely linked with 'marketing and sales' teams to get real-time feedback about their innovations. Such association can also have an added advantage for R&D teams in terms of being able to understand the 'minds' of their target customers. Gaining such critical consumer insights can help R&D teams tweak their

products or services such that they address the real pain-points of the consumers and design their products/services accordingly. This gives them a better chance to command 'premium' pricing on their innovative products and thus ensure market success. Superior market share can be translated into a long-term 'sustainable competitive advantage'. The onus of creating such sources of 'sustainable competitive advantage' lies with the Top Management Teams (TMTs) of an organization to reorient, restructure and realign their R&D teams around aspects associated with customer, market and technology to achieve their strategic goals. Proactive approach of TMTs, can play a pivotal role towards achieving this objective.

In this paper, we have attempted to highlight the significance of proactive leadership to build long-term innovation capabilities in R&D teams working in technology-oriented organizations. 'Proactiveness' of TMTs, especially while framing organizational-level policies towards innovation can really turn-around the fate of the organization irrespective of its size, nature and area of operation. But, one aspect which TMTs should keep in mind while framing organizational-level policies is that - not all teams are similar and 'teams' vary among themselves based upon their nature of work, size and composition. This paper brings out these variations between R&D teams operating in various public-funded R&D organizations throughout India. It shows how different R&D teams vary amongst each other on aspects related to leadership and innovation, within an organization. TMTs may keep these differences in mind while framing organization-wide policies to encourage and enable innovation.

#### Managing Innovation

Innovation, perhaps, has been studied most extensively at 'organizational level' and interesting insights have emerged when one tries to explore how organizations perceive and manage innovation within an organizational setting. Managing Innovation, within an organizational setting, requires a completely 'holistic' perspective and an in-depth understanding about a range of external as well as internal factors that can impact innovation. Especially, when one tries to understand the (possible) strategic impacts of technological innovation on business performance at an organizational level. Since TMTs perceive innovation as a 'strategic tool' to differentiate their organization from competitors, it is imperative to gain an in-depth understanding about the major factors that drive innovation in an innovation-oriented organization. These factors may be related to aspects which are internal to the organization like its organizational structure, culture, expertise and leadership etc. or external factors such as the operating sector, competition, market structure and government regulation etc. In this study we only focus on aspects internal to the organization and try to understand how some of these aspects can be improved upon in order to improve the overall innovation capability of an organization.

The ultimate aim of an organization to build 'long-term' innovation capabilities is to safeguard its existence and survival in the long-run. Managing innovation, within an organization becomes a complex challenge because 'innovation' by default is closely associated with 'technological change'. Either innovation is the result of a 'technological change' or it is a cause for it. Things further get complicated, if this technological change is 'disruptive' in nature and that's when it can challenge the very 'existence' of an organization. Recent history is full of technological giants which have filed for bankruptcy, simply because they have not been able to manage 'innovation' or even foresee that a technological innovation might wipe them out of business. That's how important 'managing innovation' can be, for an organization. Needless to say that 'existence' of the organization in the long-run precedes competitiveness in the short-run, in terms of priorities for an organization. Its only when an organization exist, then can it think about competing with its opponents for market share etc.

#### The Capability Perspective of Managing Innovations

Innovation as a strategy to differentiate oneself has been widely used by organizations to position them in the marketplace. In highly competitive business environments, organizations compete against each other not just at product level but, more so at the capability level. To understand innovation from an organizational capability perspective, we first try to understand the meaning and the significance of the term "capability", within an organizational setting by drawing upon the literature on organizational capabilities and then attempt to link it to innovation, to better understand the core concept of "innovation capability". Ulrich & Smallwood (2005) identified the "capability to innovate" as one among the 11 capabilities that well-managed organizations tend to have. These collective set of capabilities were defined

as “organizational capabilities”, which are key intangible assets (can’t be seen or touched), yet they make all the difference in the world when it comes to market value (Ulrich & Smallwood, 2004).

Along similar lines, Teece, Pisano, & Shuen, (1997) proposed the concept of “dynamic capabilities” to highlight the important role of capabilities to build, integrate, and reconfigure resources to cope up with the highly volatile environment. Huang, Lin, Wu, & Yu, (2015) also suggested 3 types of dynamic capabilities - integration, learning, and reconfiguration. The integration aspect of dynamic capabilities was also suggested by Lawrence & Lorsch (1967) who referred to it as “Integrative capability”. These capabilities have also been referred to as “combinative capabilities” by Kogut & Zander (1992) who defined them as the intersection of the capability of the firm to exploit its knowledge and the unexplored potential of the technology, or what Scherer (1965) originally called the degree of “technological opportunity.” The learning aspect was also known as “Absorptive capacity”, as coined by Cohen & Levinthal, (1990) who defined it as “a firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends”.

Similarly, Lin & Wu (2014) also investigated the role of dynamic capabilities in the resource-based view framework and explored the relationships among different resources, dynamic capabilities and firm performance. Resource-based view, specifically, suggests that the accumulation of valuable, rare, inimitable and non-substitutable resources is the basis of enterprise competitiveness and economic rent (Barney, 1991; Lin & Wu 2014). Newbert (2007) also suggests that valuable and rare resources are related to competitive advantage and that competitive advantage is further related to performance. Dynamic capabilities are stable over time and more difficult for competitors to copy than access to capital markets, product strategy, or technology (Teece et al., 1997). Leonard-barton, (1992) investigated how managers of new product and process development projects face a paradox: how to take advantage of core capabilities without being hampered by their dysfunctional side. Atuahene-Gima (2005) explored an important strategic dilemma in product innovation and termed it as “capability-rigidity paradox” concerning “how to exploit existing product innovation competencies (competence exploitation) while avoiding their dysfunctional rigidity effects by renewing and replacing them with entirely new competencies (competence exploration).”

Above evidences clearly highlight the importance of studying capabilities that may help organizations to innovate over a long period of time. Therefore, we wish to explore the nature of these ‘innovation capabilities’ and try to understand those critical factors which might positively or negatively impact it at various levels within the organization. Since, innovation within organizations is not done in silos but in teams, it becomes imperative to understand the team-level aspects associated with innovation, as explained in the following section.

### **Innovation Capability of Teams**

When a set of talented people come together to work in a team, they integrate their talents to achieve a common goal to create new possibilities and opportunities. Along with their talents, they also bring together their personalities, attitudes and working styles to the group which may create positive or negative implications on the performance and effectiveness of that group. This might also be a major cause for variations among different teams in terms of their productivity. Previous research on team-level studies have also highlighted on aspects such as team size, team communication, and team conflict etc. All of these aspects are extremely important while understanding organizational-level aspects that might influence team-level innovation capability. Having said that, given the dynamic nature of ‘team-level innovation capability’, there seems to be plenty of scope to further explore this topic under various scenarios like nature, size and age of the teams operating within an organization.

This paper highlights these aspects associated with team-level innovation capability of R&D teams operating within research-driven organizations in the Indian context. Innovation capability of teams, has been conceptualized as the ability of the R&D team to transform its expert knowledge, skill and innovative and resources into new products or services using appropriate customer-focus and capability-manifestation for the benefit of their organization. Both, customer-focus and capability-manifestation play a key role in building long-term innovation capabilities in R&D teams and hence, research-driven organizations, as explained in the subsequent sections.

**Customer-focus:**

The importance of developing technological innovations in a customer-focused manner has been highlighted by a number of past researchers in marketing, business strategy and technology management. Extant literature indicates that market-focus, learning-orientation, and innovation are highly correlated and frequently overlap with each other with respect to their definitions and best practices (Hurley and Hult, 1998; Calantone et al., 2002; Keskin, 2006). Past literature in marketing management describes 'market-orientation' as a set of specific behaviors and processes (Kohli and Jaworski, 1990), or an integral aspect of culture (Narver and Slater, 1990) to deliver superior customer value.

Hurley and Hult (1998) proposed a conceptual framework to connect marketing-related constructs and dimensions from organizational learning to assess and measure the innovation capability of an organization. Laforet (2007) studied the relationship between an organization's size, strategy, market-orientation and innovation to find their relationship with organizational innovativeness. Keskin (2006) explored the links between market orientation, organizational learning and organizational innovativeness in small and medium sized enterprises (SMEs) belonging to developing countries. Kundampully (2002) clearly pointed out that innovation activities undertaken by organizations on behalf of their target customers is, indeed, a potent strategy to ensure long-term success of the organization.

Prahlad & Ramaswamy (2004) have highlighted the significance of co-creating products or services in close association with their end-users. They also emphasized on the fact that the future of an organization, hinges on the new approaches to value creation, between organizations and their target customers. Ngo & O'Cass (2012) proposed a conceptual model which integrates market orientation and innovation capability along with marketing capability and innovation performance. Theoretical evidences motivate us to further explore the intricate relationship between customer-focus and innovation capability of teams.

**Capability Manifestation**

Apart from customer-focus, manifestation of innovation capabilities also plays a critical role in developing long-term innovation capabilities in R&D teams. It is highly important for R&D teams to receive regular feedback, comments and suggestions on their innovations so that they can improve their innovations accordingly. This can make or break the future of that innovation when it moves from labs to the market for commercial use. Manifestation of innovation capabilities enables R&D teams to showcase their creativity and innovativeness to the larger audiences in the outer world. These people may not have access to such innovations, which generally stay hidden inside confines of the laboratories. Teams may also be positively benefited by reaching out to their 'target' customers, 'potential' collaborators or competitors which can have a huge impact on transforming the way 'innovation' is currently managed.

According to Read (1996, p. 223) today's organizations are knowledge-based and their success or failure majorly depends on how they are able to manage their creative and innovative capabilities. Capability Manifestation can be perceived as a technique used by an organizational unit to demonstrate its power or capability, which previously was not recognized by its competitors (Uphoff & Ilichman, 1972, p.175). Although, the concept originates from military literature, it finds its application in a number of faculties like sociology, economics, arts, political sciences, and management science. West & Farr (1990, pp. 3-4) emphasize that ideas and their creative manifestations through products/services are at the very core of social change. In an organizational context, manifestation of creativity and innovativeness can be practiced through developing products, services, systems or practices. In order to be successful and widely accepted, these products or services have to prove themselves that they work satisfactorily under various conditions. Such manifestation can lead to permanent implementation of new innovation in the mainstream (Damanpour & Gopalakrishnan, 1998).

Thus, capability manifestation seems to be an important dimension, which can impact of innovation at team level. We wish to explore various aspects related to manifestation of innovation capability by asking R&D team members to assess their teams on capability-manifestation related aspects such as unique credentials, national or global-level awards and recognition, premium pricing for extra features and competitor benchmarking etc. We are curious to explore the impact of customer-focus and capability-manifestation during the development phase of new product or service innovations. Both these aspects related to building long-term innovation capabilities in R&D teams depend on the perceptions of

the top leadership of that particular organization. Subsequent sections deal with aspects related to organizational-level leadership which may impact innovation capabilities of R&D teams and organizations, in general.

### **Organizational Leadership**

Leadership has been an extensively researched area in terms of various leadership styles, characteristics and roles it can play to influence people around them. In fact, it has even been defined as the capability (of a person) to influence a group of individuals towards achieving a larger vision, or shared goals (Robbins & Judge, 2013 p. 368). Leaders, who wish to create a positive impact, can undertake a gamut of initiatives within an organization, right from ideation to execution. They can also be planner, enabler, facilitator and coordinator of various activities especially innovation. Leadership also plays a vital role in overcoming obstacles and fighting tough situations, thus becoming role models for others in the organization to follow (Baruch & Walker, 2013). Having said that, one of the most difficult challenges faced by leaders is to build the right kind of organizational climate that empowers inspires and motivates the entire work force throughout the organization (Bass, 1985). Jung et al. (2008) studied the impact of TMT's leadership style on innovativeness of their organization.

Innovation is one such organizational-wide challenge that requires participation from each and every member of the organization. The right kind of leadership can create that spark required in the organization to turn things around for that particular organization. The impact of leadership on innovation-related activities has been substantially studied and researched in order to those factors which might play a moderating/mediating role (Denti & Hemlin, 2012). Isaksen & Akkermans (2011) studied the influence of organizational-level leadership on organizational climate for creativity & innovation. Burpitt & Bigoness (1997) explored the effects of leader's 'empowering behavior' on the level of innovation among professional teams. They also identified those behaviors which leaders can use in order to foster the spirit of innovation among their R&D teams. Hence, understanding the relationship between leadership and innovation plays an important role in building future competitiveness of an organization (Holmgren, 2011).

LeStorti (2006) has suggested a few initiatives which TMT can undertake to inspire and encourage innovation throughout their organization. He also conceptualized leadership for successful innovation at three different levels: operational, tactical and strategic. Denti (2012) propounded that organizational-level leadership is an indispensable aspect of high-performing organizations. Leadership helps in developing an organizational climate that empowers and encourages employees to think creatively and come up with innovative solutions to organizational problems (Hemlin et al., 2008). Leaders also help in aligning their organization's strategic vision, goals and execution towards innovation (Denti 2012). Apart from vision, leadership's support and resource allocation for innovative projects also emerge to be important factors impacting innovation performance of an organization, as explained in the following sections.

### **Vision for Innovation**

Past researchers have extensively highlighted the significance of leadership's vision to promote and facilitate innovation within an organization. A carefully crafted vision for the future of an organization can serve as a powerful tool that can turn around the future of an organization by aligning all the skills, capabilities and resources available in the organization. Researchers like Bass (1995), Le Storti (2006) and Denti (2013) have identified visionary leadership as the ability to conceptualize and articulate a robust, realistic and impressive vision of the organization's future (Sashkin, 1997). The vision of top leadership can determine if an organization pro-actively nurtures innovativeness and creativity. An exciting vision can help TMTs in creating a work environment where every organizational member can participate in innovation activities completely and achieve professional success and personal growth while pursuing the shared vision.

TMTs can motivate organizational members to reflect upon their inner strengths and weaknesses in order to bring out their creative talents by aligning their individual visions with shared vision of the organization. TMTs can inspire others with a meaningful purpose and a larger cause to inspire a sense of mission in the employee's minds. Such kind of inspiring work environment is conducive for innovation

and creativity. This type of leadership will eventually transform ordinary employees into influential leaders of the future.

### **Support for Innovation**

Past researchers have heavily emphasized upon the significance of TMT's support for innovation related activities (Scott, 1994; Isaksen, 2011; Oldham and Cummings, 1996). Past research also suggests that change in attitude towards innovation cannot occur without the active involvement, support and commitment of TMTs who continuously work towards creating a positive organizational change. Hence, a good leader must be able to facilitate the process of (a) supporting R&D teams to transform their combined knowledge into innovations (b) managing an organization's innovation-related goals (Hemlin, 2006). During the "innovation phase", when key organizational members and critical resources are being assembled, the role of TMTs is that of a resource allocator. TMTs must judiciously allocate sufficient resources like talented employees, funds, or development time to complete critical projects (Le storti, 2006).

### **Leadership: Resource Allocation**

Extant literature on resource allocation for innovation (Lewicki, 1980; Staw, 1981; Fox & Staw, 1979) elaborates upon some of the behavior-related dimensions of TMs especially while making resource-allocation related decisions such as diminishing revenues or increasing costs resulting into undesirable long-term results. TMTs have to undertake decisions whether to stay invested at the cost of taking losses or abort the plan. Northcraft and Neale (1986) extensively studied the data-driven approach towards understanding the leader's behavior in such difficult situations. Taylor et al (2008) elaborated upon the importance of long-term visionary leadership along with strategic planning as key forces driving the resource allocation process. Thus, resource allocation plays a strategic role in determining the success or failure of an innovation-related activity and hence, worth studying in an innovation management context.

### **Methodology and Analysis**

An online questionnaire was developed and distributed to public-funded research organizations all over India to seek responses from their teams on aspects critical to innovation and leadership. In total, 136 R&D teams responded to the online questionnaire out of which 80 were academic research teams (363 respondents) and 56 were industrial research teams (265 respondents). Each team was composed of one team-leader and 4 to 5 team-members, who were requested to complete the survey. The questionnaire measured the respondent's "opinion" about his/her "research team" on various aspects related to leadership and its impact on innovation. 'Likert' scale was used to scale the responses from 1 to 5 by the respondents.

An independent sample t-test was conducted on the data collected from 628 responses belonging to 80 academic R&D teams (363 respondents) and 56 industrial R&D teams (265 respondents). Table 1 compares the two groups based on the nature of research work undertaken by R&D teams (academic or industrial) and clearly brings out the aspects on which the two groups significantly differ. Table 2 compares the two groups based on the size of the research organization (large-sized or small-sized). Table 3 compares the two groups based on the age of the respondents (young or experienced researchers) on aspects related to innovation and organizational leadership. Descriptive statistics such as sample mean (M) and standard deviation (SD) were computed and reported in a tabular format (refer Table 1, 2, 3). SPSS Version 21 was used to compute the descriptive statistics and calculate the t-statistic. The t-test is a well-known statistical test which allows one to infer about the significant difference among the group means belonging to the two unrelated groups. In this paper, we used T-test to understand how the two teams belonging to different groups differ from each other.

### **Findings**

Results reveal that R&D teams vary from each other on aspects such as (1) existence of the word 'innovation' in the organization's vision statement (2) team receiving awards/ recognition at national/global level (3) close association with customers while product development (4) customer's willingness to pay 'extra' for 'added' features. Top Management Teams (TMTs) should keep these aspects

in mind while designing organizational level policies aimed towards encouraging and enabling innovation within their organizational settings.

### Implications

The conceptual model proposed to capture the impact of 'organizational leadership' on team innovation capability can have far-reaching theoretical and practical implications. Top Management Teams (TMT) responsible for setting up the vision and achieving those visions can use this model to set up innovation-oriented policies for better market performance. The tables also show the aspects on which the two groups agree as well as disagree leading us to important insights as shown below:-

Top Management Teams (TMT) at academic or industrial research-driven organizations should ensure that their R&D teams are well aware of the existence of the word "Innovation" in their organization's vision statement or core values which inspires them to work with clarity towards achieving organizational goals.

Top Management Teams (TMT) at academic or industrial research-driven must also ensure that allocation of a separate "innovation fund" for supporting financial requirements of innovative ventures is managed properly so that research teams can perform better

Top Management Teams (TMT) at the big-sized and small-sized organizations should promptly fulfill their employee's "infrastructure-related" requirements

Top Management Teams (TMT) should ensure that "executing their promises" on all major issues can help their research teams to perform better.

Top Management Teams (TMT) should be "open to listen" to the voices of the employees

Top Management Teams (TMT) should "empower them to innovate", despite past failures. This has tremendous potential to stimulate entrepreneurial and innovative work in an organizational setting.

### Summary and Conclusion

In this current study, we have emphasized on some of the key aspects associated with 'team-level innovation capability', and 'organizational leadership' which have not been sufficiently studied at organizational-level or individual-level. There is a growing demand from academicians and practitioners to study and understand the dynamics of 'team-level innovation capability'. Due to the emerging importance of teams in organizations, success or failure of its products or services would majorly depend upon the efficiency and effectiveness of its R&D teams in terms of developing innovations. The conceptual model explains the unidirectional top-down impact of dimensions related to organizational leadership on 'innovation capability' of R&D teams.

Data collection was done through an online-questionnaire seeking responses from academic and industrial research team members working in India's most 'elite' research-driven organizations and funded by the government. Independent sample t-test was performed on the data consisting of responses from 80 academic teams (363 respondents) and 56 industrial teams (265 respondents). Results show that Academic and Industrial research teams differ on 'organizational leadership' aspects such as (1) Existence of the word "Innovation" in their organization's vision statement or core values and (2) Allocation of a separate "innovation fund" for innovative ventures by the top leaders. Research teams belonging to big-sized and small-sized organizations also differ on leadership-related' aspects such as (1) Leaders promptly fulfilling their employee's "infrastructure-related" requirements (2) Leaders "executing their promises" on all major issues (3) Leaders are "open to listen" to the voices of the employees. Young researchers also differ from experienced ones on aspects such as (1) Leaders in their organization "empower them to innovate", despite past failures.

These findings emerge as our 'original contribution' towards the literature on 'innovation capability' and many of the innovation-driven organizations can explore and exploit these findings to design their internal innovation processes and people practices. Interventions can be designed to enhance the 'innovation output' of their respective organizations. Top Management Teams (TMT) of technology-driven organizations can work on developing the right workplace climate which empowers and facilitates innovation in the organization. Developing innovations from target customer's perspective and manifesting such capabilities by research teams operating in research-driven organizations can be a game-

changer. Thus, organizational leadership related aspects such as vision, resource allocation and support for innovation can help to build long-term 'innovation capabilities'.

Towards the end of this paper, theoretical and practical implications for Top Management Teams at innovation-driven organizations have been presented. TMTs can focus on aspects such as (1) ensuring that the word "Innovation" clearly existing in their organization's vision statement or core values and (2) Allocation of a separate "innovation fund" for innovative ventures by the top leaders. Research teams belonging to big-sized and small-sized organizations also differ on leadership-related aspects such as (1) Leaders promptly fulfilling their employee's "infrastructure-related" requirements (2) Leaders "executing their promises" on all major issues (3) Leaders are "open to listen" to the voices of the employees. Young researchers also differ from experienced ones on aspects such as (1) Leaders in their organization "empower them to innovate", despite past failures.

#### **Research limitations and direction for further research**

This paper attempts to highlight the univariate cross-level impact of a single organizational-level factor (leadership) on a team-level innovation capability, which is a much more complex phenomenon. According to experts, team-level innovation capability can be dependent on many more organizational-level factors (such as organizational culture, organizational networks or organizational structure) or individual-level factors (like personality traits, individual brilliance, personality types etc.) which have not been included in this particular paper. We have restricted ourselves to studying a cross-level impact of organizational-level 'leadership' on team-level innovation capability. Future studies may involve a deeper understanding of multi-level impact of 'higher-level' (organizational-level) factors on 'lower-level' (team-level and individual-level) factors.

Table 1: Leadership-Innovation - Differentiating Aspects: Academic V/s Industrial Research Groups

ITEM	Academic (80 Teams) N1 = 363	Industrial (56 Teams) N2 = 265	Academic -Industrial
	Mean (SD)	Mean (SD)	95 % Confidence
Allocation of "innovation fund" for innovative ventures by our Leaders (L_alloc2)	2.84 (1.25)	3.09 (1.28)	0.01
Existence of the word "Innovation" the organization's vision statement (L_Vis1)	3.71 (1.12)	4.01 (1.14)	0.00
Consistently appreciation of the quality of our work by our clients (Manifest_3)	3.68 (0.96)	3.93 (0.91)	0.03
Receiving "awards & recognition" at various national or global level (Manifest_5)	3.168 (1.10)	3.41 (1.0)	0.00
Creating products in "close association" with target customers (Customer_1)	3.68 (1.14)	3.93 (1.0)	0.02
Willingness customers of to "pay premium" for "added features" (Customer_2)	3.07 (1.13)	3.69 (1.12)	0.00
Periodically releasing "upgraded versions" of products or solutions (Customer_3)	2.93 (1.17)	3.39 (1.10)	0.001
Continuous tracking and benchmarking by competitors (Customer_4)	3.15 (1.12)	3.44 (1.08)	0.00
Emphasis on flexibility/ speed of development "without compromise" on quality (Customer_5)	3.54 (1.14)	3.91 (1.0)	0.005

Where \*:  $p < 0.05$ ; \*\*:  $p < 0.01$

Table 2: Leadership-Innovation - Differentiating Aspects: Small V/S Large Sized Firms

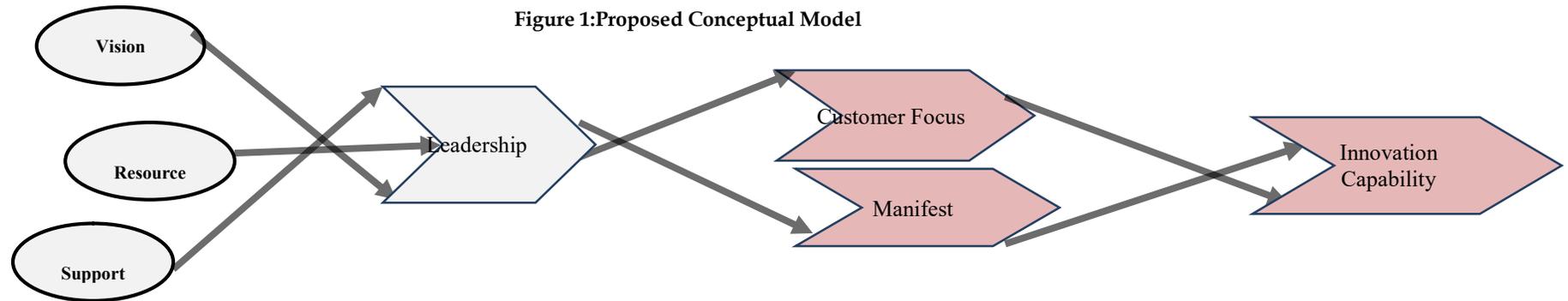
ITEM	Small Researchers (80 Teams) N1 = 363	Large Researchers (56 Teams) N2 = 265	Small - Large Researchers
	Mean (SD)	Mean (SD)	T - test 95 % Confidence
L_Sup1: "execute their promises" on major issues by our organizational leaders	3.73 (1.12)	3.53 (1.12)	0.02
L_Sup2: Leaders in our organization are "open to listen" to the voices of the employees	3.75 (1.54)	3.48 (1.05)	0.00
L_alloc3: Our Leaders promptly fulfill all our "infrastructure-related" requirements	3.76 (1.11)	3.48 (1.13)	0.00
L_Vis1: The word "Innovation" exists in our organization's vision statement or core values	3.55 (1.12)	3.65 (1.04)	0.03
Manifest_5: My Team keeps receiving "awards & recognition" at national /global level	3.17 (1.08)	3.35 (1.02)	0.03
Customer_1: My Team creates products in "close association" with our customers	3.20 (1.12)	3.44 (1.12)	0.008
Customer_2: Our customers are willing to "pay more" for "extra benefits & features or functionality"	2.92 (1.10)	3.12 (1.16)	0.032

Where \*:  $p < 0.05$ ; \*\*:  $p < 0.01$

Table 3: Leadership-Innovation - Differentiating Aspects: Young V/S Experienced Group Members

ITEM	Young Researchers Mean(SD)	Old Researchers Mean(SD)	Young - Old 95 % Confidence
The word "Innovation" exists in our organization's vision statement (L_Vis1)	3.70(1.12)	4.10(1.04)	0.00
L_Vis3: Top Leaders in our organization "empower us to innovate" , despite past failures	3.62(1.11)	3.82(1.04)	0.03
L_Sup2: Leaders in our organization are "open to listen" to the voices of the employees	3.51(1.54)	3.785(1.05)	0.00
L_alloc2: Our Leaders have allocated a separate "innovation fund" for new & innovative ventures	2.84(1.25)	3.15(1.28)	0.00
Manifest_1: My Team (or some team-members) has "Unique credentials"	3.6(1.14)	3.9(0.99)	0.00
Manifest_2: My Team has done pioneering work in its work- domain	3.5(1.12)	3.9(1.01)	0.00
Manifest_3: My Team is consistently appreciated by our clients for the quality of our work	3.6(0.97)	4.0(0.84)	0.00
Manifest_4: My Team is "well-known" for consistently developing innovative products/solutions	3.3 (1.05)	3.7 (0.99)	0.00
Manifest_5: My Team keeps receiving "awards & recognition" at national /global level	3.1 (1.09)	3.4 (1.02)	0.00
Customer_1: My Team creates products in "close association" with our customers to provide customization	3.1 (1.12)	3.7 (1.12)	0.00
Customer_2: Our customers are willing to "pay more" for "extra benefits & features or functionality"	2.9 (1.13)	3.27 (1.12)	0.00
Customer_3: My Team periodically releases "upgraded versions" of our products/ solutions	2.9 (1.14)	3.4 (1.17)	0.00
Customer_4: Our competitors continuously track our progress and benchmark us	3.15 (1.09)	3.50 (1.12)	0.00
Customer_5: My team emphasizes on flexibility and speed of development "without compromising" on quality	3.54 (1.10)	4.01 (1.02)	0.00

Where \*:  $p < 0.05$ ; \*\*:  $p < 0.01$



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