INNOVATION CULTURE ANALYSIS
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There are many different ways in which cultures of organizations have been described and studied in the past. These studies vary in their description of culture depending on the aspects of culture they focused on. This study explored six factors that sustain innovation culture in leading innovative organizations in India and abroad. The six factors were: Organization Climate, Leadership, Core Values, Customer Focus, Creativity and Envisioning Future. The study analyzed the impact of these six factors on the performance of the organization.

1. ORGANIZATION CLIMATE

Organization Climate in Leading Innovative Organizations

‘Organization climate’ refers to the work environment in an organization that influences the actions, behavior and performance of people in the organization. It shows the extent to which an organization emphasizes and practices the principles enshrined in its values.

Climate is predictor of the success of an organization.

Fig. 33: Organization Climate in Leading Innovative Organizations

| People receive top-level recognition for their contributions | 54.64 |
| Little difference in social status between managers & employees | 48.43 |
| Freedom & space to make our own choices relating to our work | 46.04 |
| Encourage people to challenge the status quo | 45.74 |
| Unique culture of love, trust & passion | 41.40 |
| Appropriate level of tolerance for failure of projects | 41.05 |
| Orgn permeates a culture of playfulness & humor for people to work | 38.92 |

Percentage of Respondents

| 30 | 35 | 40 | 45 | 50 | 55 | 60 |
This study of organization climate of innovative organizations revealed that there are several commonalities in the way these organizations nurture innovation. Regardless of the type of innovation they might be engaged in; process, product or business model, they paid immense attention to these practices. The top three attributes in order of priority were: 1. People received top-level recognition for their contributions; 2. There was hardly any difference in social status between managers and employees, all worked as team members; 3. People were given freedom and space to make their own choices relating to their work. The other important attributes were: these organizations encouraged people to challenge the status quo; they nurtured a unique culture filled with love, trust and a passion for doing a million small things in an exceedingly superb manner; and there was an appropriate level of tolerance for failure of projects in these organizations.

It can be observed in figure 33 that nearly 45 percent of the people feel that they do not receive appropriate recognition from top management for their contributions. The management needs to take necessary steps to rectify this situation. The people at these organizations also feel that management should pay more attention to creating an environment where the members belong to a family. The leaders of these organizations need to adopt a more positive attitude towards encouraging people to take risks, experiment and try new things. These initiatives could possibly help to enhance the innovative capabilities in organizations.

**Impact of Organization Climate on Performance of Leading Innovative Organizations**

The research revealed that there is a significant correlation between ‘Organization Climate’ and the capability to launch innovative products and services on a sustained basis. Among the leading innovative organizations selected for this study, Google, Dun & Bradstreet and
 GE stand out for their ability to surprise and delight customers with their offerings. Google launched a number of new products at its sixth annual developers conference in May 2013. Prominent among them were: Android Studio - a new development environment for Android app developers is intended to help developers work more efficiently; Google Play Developer Tools – to enable developers to build games with increased interactivity; Google Music All Access – a new subscription music service; Google also completely revamped its Google+ social network with 41 new features, Google Maps - Google completely redesigned and revamped its Google Maps service; and Android Developer Console – an analytics service for developers.

D&B introduced an innovative product - Hoover’s Analytics on May 16, 2013. This product helps small businesses to evaluate their customers’ usage patterns and also help to identify new growth opportunities.

Some of GE’s innovative new products are: Venue 40 – a tablet sized Ultrasound technology device, Vscan – a pocket-sized Ultrasound scanning device, these devices enabled scanning technology to became more portable and accessible than before. GE also introduced ‘Discovery CT750 High Definition CT Scanner’ offering twin benefits of providing high resolution images and enabling the physician to reduce the number of dosed while treating a patient. Another innovative product by GE, the Discovery NM630 scanner is not only capable of taking superior quality scans; it also enables physicians to reduce dosage requirement by 50 percent less than what is mandated by Medicine protocols.
Organizations with a positive organization climate demonstrated strong capability to convert their ideas into innovative products and services consistently. Google, D&B and GE excel at converting ideas to new products and services. Google has a dedicated product ideas website where anyone can suggest a new idea and others can vote for it. Google picks up new ideas based on the number of votes received. Many of the new features for its new Maps, Google+ and Voice based search came from ideas suggested on the public platform.

D&B’s new product – Hoover analytics was designed specially to address the analytics requirements of small and medium businesses, since there was a lack of product focus in these businesses. GE’s new products such as Vscan, Venue 40 and MAC400 have been very successful mainly due to their affordability. GE now plans to launch nearly 100 products in the next 3 – 4 years under its new frugal innovation initiative.
A multiple regression analysis was conducted to study the impact of ‘organization climate’ on innovation abilities of leading innovative organizations. The analysis revealed that organizations that focused on nurturing a climate where innovation was supported and encouraged, demonstrated superior innovation capabilities. The superior innovative abilities enabled these organizations to introduce unique new products on a consistent basis.

**Independent Variables:**

Organization Climate (OC)

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE_N)

Age of the Organization (normalized) (AGE_N)

**Dependent Variable:** Number of Ideas from External R&D Centers (NIERDC)

---

1 Please refer to questionnaire in Appendix

2 Please refer to Innometer in Appendix
The regression analysis showed that there was significant positive impact on – ‘number of ideas from external R&D centers’ (dependent variable). The innovation capabilities of innovative organizations showed a strong acceptance at 94 percent confidence level indicating that ‘organization climate’ was a major determinant of successful innovation. Since P value is .063 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from external R&D centers’ was accepted.

Table 3: Impact of Organization Climate on Performance of Leading Innovative Organizations – Number of Ideas from External R&D Centers

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.791a</td>
<td>.625</td>
<td>.417</td>
<td>.577</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>5</td>
<td>1.000</td>
<td>3.003</td>
<td>.072b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>9</td>
<td>.333</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIERDC
b. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-2.373</td>
<td>5.429</td>
<td>-.437</td>
<td>.672</td>
</tr>
<tr>
<td>OC</td>
<td>3.548</td>
<td>2.171</td>
<td>.462</td>
<td>1.635</td>
</tr>
<tr>
<td>NOE_LN</td>
<td>-.097</td>
<td>.124</td>
<td>-.269</td>
<td>-.787</td>
</tr>
<tr>
<td>AGE_LN</td>
<td>-.530</td>
<td>.261</td>
<td>-.708</td>
<td>-2.003</td>
</tr>
<tr>
<td>PRODINCO</td>
<td>.723</td>
<td>.514</td>
<td>.438</td>
<td>1.407</td>
</tr>
<tr>
<td>PROCINCO</td>
<td>2.038</td>
<td>.556</td>
<td>1.316</td>
<td>3.668</td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIERDC

The analysis revealed that ‘PROCINCO’ had the most significant impact (t = 3.668) on the ability of innovative organizations to successfully convert ideas into innovative products and services at a 95 percent confidence level; indicating that organization climate has a
stronger impact on collaborations with premier research institutions across the world to introduce innovative products and services for the process innovation group of organizations.

**Dependent Variable:** Conversion Rate of Ideas to Products and ServicesIntroduced in Previous Two Years (CRITPSL2YP)³

The analysis showed that at 93 percent confidence level, the independent variables had a significant impact on – ‘conversion rate of ideas to products and services introduced in previous two years’ (dependent variable). The independent variables accounted for 62.1 percent of total variance on the dependent variable.

**Table 4: Impact of Organization Climate on Performance of Leading Innovative Organizations – Conversion Rate of Ideas to Products and Services Introduced in Previous Two Years**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>a. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>a. Dependent Variable: CRITPSL2YP</td>
</tr>
<tr>
<td>b. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>OC</td>
</tr>
<tr>
<td>NOE_LN</td>
</tr>
<tr>
<td>AGE_LN</td>
</tr>
<tr>
<td>PRODINCO</td>
</tr>
<tr>
<td>PROCINCO</td>
</tr>
<tr>
<td>a. Dependent Variable: CRITPSL2YP</td>
</tr>
</tbody>
</table>

³ Please refer to Innometer in Appendix
Since P value is .075 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘conversion rate of ideas to products and services introduced in previous two years’ was accepted. The analysis revealed that among the independent variables, ‘PROCINCO’ had a significant impact, at 94 percent confidence level on the ability of innovative organizations to convert creative ideas into innovative products and services. The analysis indicated that a healthy work climate has a strong impact on the company’s ability to convert ideas into unique new products and services for process innovation group of organizations.

**Dependent Variable:** Success Rate of New Products and Services Introduced in Previous Two Years (SRNPL2YP)

The regression analysis showed that there was significant positive impact on – ‘success rate of new products and services introduced in previous two years’ (dependent variable). The innovation capabilities of innovative organizations showed a strong acceptance at 94 percent confidence level indicating that ‘organization climate’ was a major determinant of successful innovation.

**Table 5: Impact of Organization Climate on Performance of Leading Innovative Organizations – Success Rate of New Products and Services Introduced in Previous Two Years**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.791a</td>
<td>.625</td>
<td>.417</td>
<td>2.886</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN

Please refer to Innometer in Appendix
### ANOVA*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>125.054</td>
<td>5</td>
<td>25.011</td>
<td>3.003</td>
<td>.072</td>
</tr>
<tr>
<td>Residual</td>
<td>74.946</td>
<td>9</td>
<td>8.327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>200.000</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: SRNPL2YP  

b. Predictors: (Constant), PROCINCO, OC, NOE_LN, PRODINCO, AGE_LN

### Coefficients*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>48.137</td>
<td>27.143</td>
<td></td>
<td>1.773</td>
</tr>
<tr>
<td>OC</td>
<td>17.740</td>
<td>10.853</td>
<td>.462</td>
<td>1.635</td>
</tr>
<tr>
<td>NOE_LN</td>
<td>-.487</td>
<td>.619</td>
<td>-.269</td>
<td>-.787</td>
</tr>
<tr>
<td>AGE_LN</td>
<td>-2.650</td>
<td>1.304</td>
<td>-.708</td>
<td>-2.033</td>
</tr>
<tr>
<td>PRODINCO</td>
<td>3.613</td>
<td>2.568</td>
<td>.438</td>
<td>1.407</td>
</tr>
<tr>
<td>PROCINCO</td>
<td>10.192</td>
<td>2.779</td>
<td>1.316</td>
<td>3.668</td>
</tr>
</tbody>
</table>

a. Dependent Variable: SRNPL2YP

Since P value is .072 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘success rate of new products and services introduced in previous two years’ was accepted. The analysis revealed that ‘PROCINCO’ had the most significant impact ($t = 3.668$) on the ability to introduce new products on a regular basis at a 99 percent confidence level, indicating that organization climate in organizations excelling in process innovations had a significant positive impact on the ability of organizations to successfully introduce innovative products and services that amaze and delight customers.

2. **LEADERSHIP**

### Leadership in Leading Innovative Organizations

Leadership refers to the ability of an individual or a group of individuals to sync the passion of the employees to the goals of an organization. Good leaders inspire others through their
personal behavior and character, they encourage their subordinates to challenge the status quo, and give them freedom to make decisions to accomplish the tasks assigned to them.

This research revealed that there are several commonalities in the way leaders at leading innovative organizations motivate their people to set new standards to achieve challenging goals. Leaders in these organizations lay emphasis on certain attributes in the following order. The three most important attributes are: 1. Leaders in these organizations encourage forming cross-functional teams for identifying and developing innovations; 2. Leaders set an example in demonstrating character and personal integrity in their actions and behavior; and 3. They encourage and support ideas and decisions from others.

**Fig. 36: Leadership in Leading Innovative Organizations**

<table>
<thead>
<tr>
<th>Percentage of Respondents</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage cross-functional teams for innovations</td>
<td>58.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaders demonstrate character &amp; personal integrity</td>
<td>52.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage and support ideas and decisions from others</td>
<td>52.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaders walk the talk</td>
<td>47.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop strong core competencies &amp; skills in their employees</td>
<td>46.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solicit input from all key employees for all critical initiatives</td>
<td>39.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Show an obsession in caring for their employees</td>
<td>37.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The people at these organizations feel that “soliciting ideas from employees for critical initiatives” and “an obsession to care for employees” are given a relatively low priority by the senior management. The management should take note that people are eager to share their ideas with the management and the management should give more time and attention
to receiving valuable inputs from other members of the organization. In addition to these, the people feel that the management needs to take more initiatives to cater to their needs in a better manner and create an atmosphere filled with warmth and love.

**Impact of Leadership on Performance of Leading Innovative Organizations**

The study revealed that there is a significant correlation between ‘Leadership’ and the performance of leading innovative organizations. Commitment and constant encouragement from the top management enables innovative organizations to design and develop aspirational products that customers take pride in possessing and using on a day-today basis.

**Fig. 37: Correlation - Leadership and Percentage Sales of New Products and Services over Previous Year**

Google, Tata, GE, and D&B are prominent organizations that excel at designing innovative new products. The leadership at these organizations are often intimately involved in designing some of their most innovative products. Google’s founders Larry Page and
Sergey Brin provided several vital inputs for redesigning the Google Maps and Android OS. Google Maps is considered as the best maps service available today and Android has more than 65 percent of global market share in the mobile OS arena.

Ratan Tata was passionately involved in designing Tata Motors’ most innovative product – Tata Nano. He gave several critical inputs for the engine design, seats, dashboard and overall design of the vehicle. Tata Motors is currently working on several innovative initiatives like compressed air vehicles and vehicles with zero turn radius capability.

The senior leadership at GE India coaxed their engineering teams to come up with breakthrough new products at low cost for serving the masses in emerging economies like India, Latin America and Africa.

They also encouraged the teams at every stage of the design and development process in bringing out products like MAC400, MAC800 and iMAC. The MAC series of portable ECG devices are now sold in more than 100 countries around the world. Organizations with
a committed top management demonstrated strong capabilities to convert ideas into innovative products and services consistently.

Among other organizations, Google, Moser Baer and D&B excelled in translating ideas into innovative products and services. Some of Google’s recent innovative products were Google Glass and Driverless Cars. Moser Baer in India used its CD and DVD manufacturing facilities to introduce CDs and DVDs of music albums and movies at rates competent with pirated disks. It helped to greatly reduce piracy and improve the revenues of music album artists and movie studios.

A multiple regression analysis was conducted to study the impact of ‘leadership’ on innovation abilities of leading innovative organizations. The analysis revealed that leaders in innovative gave freedom to people to share ideas, experiment and try new ways of doing things. The superior innovative abilities enabled these organizations to introduce new products and services that stood out in a cluttered marketplace by offering better value to their customers.

**Independent Variables:**

Leadership (LS)

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE_N)

Age of the Organization (normalized) (AGE_N)

**Dependent Variable:** Number of Ideas from Collaborations (NICO)

---

5 Please refer to questionnaire in Appendix

6 Please refer to Innometer in Appendix
The regression analysis showed that there was strong impact on – ‘number of ideas from collaborations’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 94 percent confidence level indicating that ‘leadership’ was a major determinant of successful innovation.

**Table 6: Impact of Leadership on Performance of Leading Innovative Organizations**

– Number of Ideas from Collaborations

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, LS, NOE_LN, AGE_LN, PRODINCO

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NICO

<table>
<thead>
<tr>
<th>Coefficients&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
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<tr>
<td>-------</td>
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<tr>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>LS</td>
</tr>
<tr>
<td>NOE_LN</td>
</tr>
<tr>
<td>AGE_LN</td>
</tr>
<tr>
<td>PRODINCO</td>
</tr>
<tr>
<td>PROCINCO</td>
</tr>
</tbody>
</table>

a. Dependent Variable: NICO

Since P value is .065 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from collaborations’ was accepted. The analysis revealed that among the independent variables, ‘PROCINCO’ had significant impact on the ability of innovative organizations to collaborate effectively with organizations across geographical regions in
order to source the best ideas and management practices. The analysis indicated that leaders in organizations excelling in process innovations had a significant positive impact on the ability of these organizations to source the best ideas both from within and outside the organization to design innovative products and services that delight customers.

**Dependent Variable:** Success Rate of New Products and Services Introduced in Previous Two Years (SRNPL2YP)$^7$

The regression analysis showed that there was significant positive impact on – ‘success rate of new products and services introduced in previous two years’ (dependent variable). The innovation capabilities of innovative organizations showed a strong acceptance at 94 percent confidence level indicating that ‘leadership’ was a major determinant of successful innovation.

Since P value is .065 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘success rate of new products and services introduced in previous two years’ was accepted.

**Table 7: Impact of Leadership on Performance of Leading Innovative Organizations**

– Success Rate of New Products and Services Introduced in Previous Two Years

<table>
<thead>
<tr>
<th>Model Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
</tr>
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<td>1</td>
<td>.797$^a$</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), PROCINCO, LS, NOE_LN, AGE_LN, PRODINCO*

<table>
<thead>
<tr>
<th>ANOVA$^a$</th>
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<td>Model</td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>127,174</td>
</tr>
<tr>
<td>Residual</td>
<td>72,826</td>
</tr>
<tr>
<td>Total</td>
<td>200,000</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: SRNPL2YP*

*b. Predictors: (Constant), PROCINCO, LS, NOE_LN, AGE_LN, PRODINCO*

$^7$ Please refer to Innometer in Appendix
The analysis revealed that ‘PROCINCO’ had the most significant impact (t = 3.215) on the ability to introduce new products at a 99 percent confidence level, indicating that leadership had a significant positive impact on the ability of organizations to successfully introduce innovative products and services that amaze and delight customers in process innovation group of companies.

3. **CORE VALUES**

Core Values in Leading Innovative Organizations

‘Core values’ and beliefs form the philosophy and ideology of an organization. They define the purpose, mission and the long time commitment of the people in the organization. An organization’s core values reveal what the organization stands for. They represent the most cherished principles of the organization. The values of an organization are like the bedrock on which the organization has been built and they represent the core reason for its existence. Regardless of the type of innovation; process, product or business model, there are similarities in the way core values are practiced in these organizations. These five common core values that are practiced by these organizations are diagrammatically depicted in figure 39 below. They are: 1. Practice of core values and beliefs by all in the organization 2. Core values define their business 3. In these organizations, rewards and recognition are
based on performance 4. Relationships are based on care and trust and 5. Senior managers walk their talk.

**Fig. 39: Core Values of Leading Innovative Organizations**

It can be noted that the “senior management walks their talk” is given low priority by the people at these organizations. It could indicate that people in general feel that the actions of the management are not in sync with what they say. This scenario if left unattended could have a damaging impact on the morale of the employees. Therefore the management must give top priority to rectifying this issue.

**Impact of Core Values on Performance of Leading Innovative Organizations**

The research revealed that there is a significant correlation between the core values and the performance of innovative organizations. Organizations with a strong set of core values demonstrated the ability to design, and develop innovative products on a consistent basis.

Dun & Bradstreet, Infosys, and GE in ‘Process Innovation’ and Google in ‘Product Innovation’ have the highest success rate of launching new products among the group of highly innovative companies.
D&B has been listed among America’s most admired companies by Fortune magazine from 2006 to 2012. Infosys has been recognized as being one of the most innovative companies in India by KPMG, and Businessweek. It has won the MAKE (Most Admired Knowledge Enterprise) award for business excellence nine times from 2003 to 2013. GE and Google have consistently been ranked among the most innovative companies in the world by Businessweek from 2005 to 2012.
They have also been consistently ranked as among the top innovative companies in the world by Fortune, Forbes and FastCompany. This study revealed that core values have a significant and positive impact on organizations’ ability to innovate and embrace open innovation. Figure 42, shows that there is a significant correlation between core values and number of ideas received from collaborations with outside organizations.

In the current competitive environment innovative organizations are actively linking up with external R&D centers to boost and cross fertilize ideas in developing and testing new concepts and product ideas. Innovative firms like GE, IBM, Google, HP, Microsoft, Infosys and Tata have demonstrated the ability to effectively capture valuable ideas that exist both within and outside their organizational domain.

**Fig. 42: Correlation – Core Values and Number of Ideas from Collaborations**

Figure 43 reveals that there is a significant correlation between core values and number of ideas received from external R&D centers. IBM is well known for its Innovation Jams, HP for its Innovation Labs, GE for its Open Innovation Challenges, Infosys for its Supply
Chain Collaboration Product Suite, Tata for its Business Leadership Awards, Akshaya Patra for networking with hundreds of schools, and Fabindia for its collaborations with thousands of artisans.

**Fig. 43: Correlation – Core Values and Number of Ideas from External R&D Centers**

![Graph showing correlation between Core Values Average and Number of Ideas from External R&D Centers.]

**Independent Variables:**

Core Values (CV)\(^8\)

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE\(_N\))

Age of the Organization (normalized) (AGE\(_N\))

**Dependent Variable:** Number of Ideas from Collaborations (NICO)\(^9\)

---

\(^8\) Please refer to questionnaire in Appendix

\(^9\) Please refer to Innometer in Appendix
The regression analysis showed that there was strong impact on – ‘number of ideas from collaborations’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 95 percent confidence level indicating that ‘core values’ was a major determinant of successful innovation.

Table 8: Impact of Core Values on Performance of Leading Innovative Organizations

- Number of Ideas from Collaborations

| Model Summary | | | | |
|---------------|-------|-------|------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .812a | .659 | .469 | .551 |

a. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

| ANOVA* | | | | |
|--------|-------|-------|-------|
| Model | Sum of Squares | df | Mean Square | F | Sig. |
| Regression | 5.269 | 5 | 1.054 | 3.474 | .050p |
| Residual | 2.731 | 9 | .303 | | | |
| Total | 8.000 | 14 | | | | |

a. Dependent Variable: NICO

b. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

| Coefficients* | | | | |
|---------------|-------|-------|-------|
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| | B | Std. Error | Beta | | |
| 1 (Constant) | -9.403 | 8.122 | | -1.158 | .277 |
| CV | 5.947 | 3.045 | .657 | 1.953 | .083 |
| NOE_LN | -.052 | .127 | -.144 | -.411 | .691 |
| AGE_LN | -.372 | .222 | -.497 | -1.676 | .128 |
| PRODINCO | .100 | .672 | .061 | .149 | .885 |
| PROCINCO | .836 | .758 | .540 | 1.103 | .299 |

a. Dependent Variable: NICO

Since P value is .05 (=.05) alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from collaborations’ can be accepted. The analysis revealed that ‘Core Values’ had the most significant impact (t =
1.953) at a 92 percent confidence level on the ability of innovative organizations to collaborate with external organizations to design and develop unique and superior products.

**Dependent Variable:** Number of Ideas from External R&D Centers (NIERDC)

The regression analysis showed that there was strong impact on – ‘number of ideas received from external R&D centers’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 95 percent confidence level indicating that ‘core values’ was a major determinant of successful innovation.

**Table 9: Impact of Core Values on Performance of Leading Innovative Organizations**

- **Number of Ideas from External R&D Centers**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

<table>
<thead>
<tr>
<th>ANOVA*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIERDC
b. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

<table>
<thead>
<tr>
<th>Coefficients*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIERDC

---

10 Please refer to Innometer in Appendix
Since P value is .05 (=.05) alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from external R&D centers’ can be accepted. The analysis revealed that ‘Core Values’ had the most significant impact (t = 1.953) at a 99 percent confidence level on the ability of innovative organizations to collaborate with premier research centers to design and develop unique and superior products.

**Dependent Variable**: Success Rate of New Products and Services Introduced in Previous 2 Years (SRNPL2YP)¹¹

The regression analysis showed that there was strong impact on – ‘success rate of new products and services introduced in previous 2 years’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 95 percent confidence level indicating that ‘core values’ was a major determinant of successful innovation.

**Table 10: Impact of Core Values on Performance of Leading Innovative Organizations - Success Rate of New Products and Services Introduced in Previous 2 Years**

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.812a</td>
<td>.659</td>
<td>.469</td>
<td>2.754</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

<table>
<thead>
<tr>
<th>ANOVA*</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>131.737</td>
<td>5</td>
<td>26.347</td>
<td>3.474</td>
<td>.050b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>68.263</td>
<td>9</td>
<td>7.585</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>200.000</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: SRNPL2YP
b. Predictors: (Constant), PROCINCO, CV, NOE_LN, AGE_LN, PRODINCO

¹¹ Please refer to Innometer in Appendix
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>12.987</td>
<td>40.609</td>
<td>.320</td>
</tr>
<tr>
<td></td>
<td>CV</td>
<td>29.737</td>
<td>15.226</td>
<td>.657</td>
</tr>
<tr>
<td></td>
<td>NOE_LN</td>
<td>-.261</td>
<td>.635</td>
<td>-.144</td>
</tr>
<tr>
<td></td>
<td>AGE_LN</td>
<td>-1.861</td>
<td>1.110</td>
<td>-.497</td>
</tr>
<tr>
<td></td>
<td>PRODINCO</td>
<td>.502</td>
<td>3.361</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>PROCINCO</td>
<td>4.179</td>
<td>3.789</td>
<td>.540</td>
</tr>
</tbody>
</table>

a. Dependent Variable: SRNPL2YP

Since P value is .05 (=.05) alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘success rate of new products introduced in previous 2 years’ can be accepted. The analysis revealed that ‘Core Values’ had the most significant impact (t = 1.953) on the ability to introduce new products on a regular basis at a 99 percent confidence level.

4. **CUSTOMER FOCUS**

Customer Focus in Leading Innovative Organizations

‘Customer focus’ refers to the orientation of an organization toward serving the needs of its customers. An organization that is focused on the needs of its customers, aligns all its activities, processes and decisions to enrich the lives of its customers with superior and unique offerings that surprise, amaze and delight them. The similarities in innovative organizations’ approach to customers are discussed in the following paragraphs. Innovative organizations gave priority to different aspects of customer service in the following order: The top three attributes were: 1. Every action was shaped by a relentless commitment to meet & exceed customer expectations; 2. Everyone understood what they had to do to add
value to customer relations; and 3. They continuously monitored customers’ feedback and used it to introduce new products and services to delight customers.

Fig. 44: Customer Focus in Leading Innovative Organizations

Other important attributes were: these organizations sought to strike a balance between attracting new customers and retaining existing ones; senior managers took time out to interact with customers; and in these organizations all departments worked together to enhance friendliness of products and services offered to the customers.

It can be noted that while these organizations have given the top priority to exceed customer expectations, they need to focus on encouraging departments and teams within the organization to interact freely with each other and collaborate in a more significant manner in order to offer more unique products and services to customers. The people at these organizations also feel that the management can take more initiatives to actively involve customers in the innovation process, this could help in understanding customer’s needs at
an earlier stage thus enabling these organizations to offer superior products and services that meet the needs of their customers in a better manner.

**Impact of Customer Focus on Performance of Leading Innovative Organizations**

The research revealed that there is a significant correlation between the Customer Focus and the performance of innovative organizations. Organizations that give top priority to satisfying customer needs have demonstrated the ability to design, develop and launch innovative products consistently. D&B and Moser Baer emerged as organizations that excelled in introducing innovative products and services. These organizations have been able to consistently come up with innovative new products due to their obsession in listening to their customers. D&B launched ‘D&B Onboard’ in June 2013. It is an innovative tool that enables organizations to meet all their due diligence requirements and reduce risks of not meeting regulatory requirements mandated for a specific industry.

![Fig. 45: Correlation – Customer Focus and Process Innovation](image)

Infosys Won the Global Award for excellence in Biomedical Engineering in June 2013 for excellence in engineering designs. Innovative organizations have demonstrated the ability to design and develop unique and superior innovative products that amaze and delight customers. Their obsession to listen and care for their customers has enabled them to
introduce superior products on a sustained basis. Figure 46, below reveals that there is a significant correlation between ‘Customer Focus’ and ‘Success Rate of New Products’. D&B and Infosys are among the organizations that have consistently excelled at introducing innovative new products and services on a regular basis.

D&B360 was recognized as one of the most innovative products in 2012 in DAAS category of products and services. D&B360 is an integrated solution that delivers D&B’s proprietary business data and other sources of information such as social media and news, into CRM and other enterprise software applications.

D&B launched a new, sales channel, the D&B AllianceNetwork in 2012 to enhance the reach of its award winning product D&B360. The AllianceNetwork comprises of a community of value-added resellers, consultants, and system integrators who provide their customers with D&B-based data solutions for CRMs that offer seamless access to the most comprehensive, current and clean business data available.

Infosys is another successful organization that has been able to introduce innovative products and services on a consistent basis. One of the most successful products of Infosys
in 2012 was ‘Infosys Cloud Ecosystem Hub’. It enables organizations to set up and offer cloud based services to customers up to 40 percent faster than comparable offerings. It is nearly 30 percent more affordable than other competitive products. It received many innovation awards for this product.

Innovative organizations also display a remarkable agility and keep their product pipeline always busy. They constantly update their existing products and services. They also introduce new products and services with enhanced features on a timely basis, to endear customers and stay ahead of the competition. Infosys and D&B are among the most successful organizations in their industries due to their ability to introduce superior products on a consistent basis. Infosys launched an innovative product – BigDataEdge in February 2013 that radically simplifies many complex tasks involved in analyzing huge amounts of data. It enables enterprises to perform complex analysis up to eight times faster than competing products.
D&B already had a highly successful product – Hoover’s the biggest business directory, in order to make the product more useful to customers, D&B introduced Hoover’s Optimizer in 2012. It is designed to help small and medium-sized businesses to analyse their customer data and improve the ROI on their marketing campaigns.

A multiple regression analysis was conducted to study the impact of ‘customer focus’ on innovation abilities of leading innovative organizations. The analysis revealed that organizations which were firmly focused on paying attention to customers’ needs and desires demonstrated superior innovation capabilities. The superior innovative abilities enable these organizations to introduce unique new products on a consistent basis.

**Independent Variables:**

Customer Focus (CF)

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE_N)

Age of the Organization (normalized) (AGE_N)

**Dependent variable:** Number of Ideas from Customers (NICU)

The regression analysis showed that there was strong impact on – ‘number of ideas from customers’ (dependent variable). The innovation capabilities of all three types of innovative organizations: Product, Process and Business Model showed an acceptance at 95 percent confidence level indicating that ‘customer focus’ was a major determinant of successful innovation.

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12 Please refer to questionnaire in Appendix
13 Please refer to Innometer in Appendix
Table 11: Impact of Customer Focus on Performance of Leading Innovative Organizations Collaborations - Number of Ideas from Customers

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(-8.838)</td>
<td>3.871</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CF</td>
<td>5.134</td>
<td>.849</td>
<td>3.279</td>
</tr>
<tr>
<td></td>
<td>NOE_LN</td>
<td>.143</td>
<td>.059</td>
<td>.719</td>
</tr>
<tr>
<td></td>
<td>AGE_LN</td>
<td>-.235</td>
<td>-.572</td>
<td>-1.906</td>
</tr>
<tr>
<td></td>
<td>PRODINCO</td>
<td>-.081</td>
<td>-.090</td>
<td>-.324</td>
</tr>
<tr>
<td></td>
<td>PROCINCO</td>
<td>-.125</td>
<td>-.148</td>
<td>-.386</td>
</tr>
</tbody>
</table>

Since P value is .044 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas received from customers’ was accepted.

Among the independent variables selected, ‘customer focus’ had the most significant impact (t = 3.279) on the ability to collaborate in highly innovative organizations. Since customer delight was the top priority of leading innovative organizations, people were encouraged to collaborate with concerned manufacturing department. Customers were involved in the implementing of ideas at every stage of product development. This helped these organizations to identify customer’s needs very early in the product development
process. It also helped to modify and improve the product during various stages in the production process.

**Dependent variable: Number of Ideas from Academia (NIAC)**

The independent variables account for 66.9 percent of total variance in the dependent variable ‘number of ideas from academia’. ‘Customer focus’ has a positive impact at 95 percent confidence level on the ability of innovative organizations to network with external academic institutions.

Since P value is .044 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas received from academia’ was accepted.

**Table 12: Impact of Customer Focus on Performance of Leading Innovative Organizations Collaborations - Number of Ideas from Academia**

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.818&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.669</td>
<td>.486</td>
<td>.297</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), PROCINCO, PRODINCO, CF, NOE_LN, AGE_LN

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1.606</td>
<td>5</td>
<td>.321</td>
<td>3.643</td>
<td>.044&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.794</td>
<td>9</td>
<td>.088</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.400</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>b</sup> Dependent Variable: NIAC

<table>
<thead>
<tr>
<th>Coefficients&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>-.9838</td>
<td>3.871</td>
<td>-.2283</td>
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<td>CF</td>
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<td>5.134</td>
<td>1.565</td>
<td>.849</td>
<td>3.279</td>
</tr>
<tr>
<td>NOE_LN</td>
<td></td>
<td>.143</td>
<td>.059</td>
<td>.719</td>
<td>2.429</td>
</tr>
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<td>AGE_LN</td>
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<td>-.235</td>
<td>.123</td>
<td>-.572</td>
<td>-1.906</td>
</tr>
<tr>
<td>PRODINCO</td>
<td></td>
<td>-.081</td>
<td>.251</td>
<td>-.090</td>
<td>-.324</td>
</tr>
<tr>
<td>PROCINCO</td>
<td></td>
<td>-.125</td>
<td>.325</td>
<td>-.148</td>
<td>-.386</td>
</tr>
</tbody>
</table>

<sup>b</sup> Predictors: (Constant), PROCINCO, PRODINCO, CF, NOE_LN, AGE_LN

<sup>14</sup> Please refer to Innometer in Appendix
Innovative organizations collaborate with reputed academic institutions to share ideas and gain new perspectives on how best to fulfil the needs of their customers. Google, GE, HP, IBM, Microsoft, Tata and Infosys have collaborations with premier academic institutions to conduct research in frontier areas of technology. Google conducts research and field tests in the area of emerging technologies for example Google is using its mapping data to test the concept of driverless cars, GE and Tata are working on various fuel cell technologies to develop long lasting power for future generation transportation vehicles.

‘Customer focus’ has the most significant impact (t = 3.279) on the ability to innovate in highly innovative organizations.

**Dependent Variable:** Conversion Rate of Ideas to Products and Services Introduced in Previous Two Years (CRITPSL2YP)\(^\text{15}\)

The regression analysis showed that there was significant positive impact on – ‘conversion rate of ideas to products and services introduced in previous two years’ (dependent variable). The innovation capabilities of all three types of innovative organizations: Product, Process and Business Model showed a strong acceptance at 98 percent confidence level indicating that ‘customer focus’ was a major determinant of successful innovation.

**Table 13: Impact of Customer Focus on Performance of Leading Innovative Organizations Collaborations - Conversion Rate of Ideas to Products and Services Introduced in Previous Two Years**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, PRODINCO, CF, NOE\_LN, AGE\_LN

\(^{15}\) Please refer to Innometer in Appendix
The analysis revealed that ‘customer focus’ had the most significant impact (t = 2.921) on the ability to introduce new products on a regular basis at a 98 percent confidence level, indicating that customer focus has a significant positive impact on the ability of organizations to successfully convert ideas into innovative products and services. Innovative companies consistently strive to serve the needs of their customers in better ways through innovations of existing products and services. Innovative companies like GE, Google, HP, IBM, Tata and Dun & Bradstreet introduce more than 200 products on an average every year.

**Dependent Variable:** Number of New Products and Services Introduced in Previous Year (NNPL1Y)\(^{16}\)

The analysis showed that at 99 percent confidence level, the independent variables had a significant impact on – ‘number of new products and services introduced in previous year’

---

\(^{16}\) Please refer to Innomet in Appendix
The analysis revealed that among the independent variables, ‘number of employees’ and ‘customer focus’ had significant impact on the ability innovative organizations to introduce successful new products on a consistent basis. Many previous research studies have shown that companies by and large have a difficult time in introducing successful new products into the market. Previous studies reveal that nearly 70 percent of new products introduced fail to succeed in the marketplace. Leading innovative companies have demonstrated the ability to not only introduce new products on a consistent basis, but also ensure that they
offer superior value to their customers. The ability to keep the product pipeline young and healthy has led to increase in profits from new products.

5. **CREATIVITY**

**Creativity in Leading Innovative Organizations**

Creativity relates to sourcing seemingly unrelated ideas from diverse sources, and coming up with unique solutions. In an organizational context, creativity refers to the process of converting imaginative ideas into unique and superior products and services. The research study has revealed that leading innovative organizations have several commonalities in the way they encourage creativity in their organizations. The most prominent among the similarities in the order of priority are: 1. People discuss diverse perspectives on important issues;

![Fig. 48: Creativity in Leading Innovative Organizations](chart)

<table>
<thead>
<tr>
<th>Percentage of Respondents</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>People discuss diverse perspectives on imp. issues</td>
<td>47.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage people to take risks and experiment</td>
<td>42.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share ideas with external innovators</td>
<td>32.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given time &amp; encouraged to think outside the box</td>
<td>25.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 30% of profits from new products in last 3 years</td>
<td>22.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees are encouraged to spend 20% of time on pet projects</td>
<td>16.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. People in these organizations were encouraged to act as entrepreneurs, take risks, experiment, and seek new ways of doing things; and 3. In these organizations people are encouraged to collaborate and share ideas with external innovators.

It can be noted that the average scores in the section on creativity are lower when compared to other sections. It could indicate that the creative abilities of these organizations are not tapped to their full potential. The top management in these organizations should focus on areas like enabling people to interact freely and share ideas with external innovators and giving people more time to work on unique or pet projects. These initiatives could probably result in a more vibrant environment where the huge amount of untapped talent and potential can be better utilized.

A multiple regression analysis was conducted to study the impact of ‘creativity’ on innovation abilities of leading innovative organizations. The analysis revealed that when organizations encouraged and nurtured creativity, they demonstrated superior innovation capabilities. The superior innovative abilities enable these organizations to introduce unique new products on a consistent basis.

**Independent Variables:**

Creativity (CR)

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE_N)

Age of the Organization (normalized) (AGE_N)

**Dependent variable:** Cost Savings from Innovations in the Previous Year (CSDILYP)

---

17 Please refer to questionnaire in Appendix

18 Please refer to Innometer in Appendix
The regression analysis showed that there was significant positive impact on – ‘cost savings from innovations in the previous year’ (dependent variable). The innovation capabilities of innovative organizations showed a strong acceptance at 93 percent confidence level indicating that creativity was a major determinant of cost savings due to innovation.

**Table 15: Impact of Creativity on Performance of Leading Innovative Organizations Collaborations - Cost Savings from Innovations in the Previous Year**

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.787&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.619</td>
<td>.407</td>
<td>.986</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), PROCINCO, CR, PRODINCO, NOE_LN, AGE_LN

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>14.190</td>
<td>5</td>
<td>2.838</td>
<td>2.921</td>
<td>.077&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>8.743</td>
<td>9</td>
<td>.971</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>22.933</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>b</sup> Dependent Variable: CSDILYP

<table>
<thead>
<tr>
<th>Coefficients&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>-2.842</td>
<td>5.528</td>
<td>-.514</td>
<td>.620</td>
</tr>
<tr>
<td>CR</td>
<td></td>
<td>5.108</td>
<td>2.293</td>
<td>.490</td>
<td>2.227</td>
</tr>
<tr>
<td>NOE_LN</td>
<td></td>
<td>.272</td>
<td>.182</td>
<td>.443</td>
<td>1.496</td>
</tr>
<tr>
<td>AGE_LN</td>
<td></td>
<td>-.070</td>
<td>.417</td>
<td>-.055</td>
<td>-.167</td>
</tr>
<tr>
<td>PRODINCO</td>
<td></td>
<td>1.196</td>
<td>.788</td>
<td>.428</td>
<td>1.519</td>
</tr>
<tr>
<td>PROCINCO</td>
<td></td>
<td>-.029</td>
<td>.944</td>
<td>-.011</td>
<td>-.031</td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: CSDILYP

Since P value is .077 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘cost savings from innovations’ was accepted. The analysis revealed that innovative organizations nurture and encourage creativity, which has a significant impact (t = 2.227) in encouraging employees to contribute towards improving the efficiency of performance in these organizations. Leading innovative organizations have demonstrated the ability to
significantly reduce costs of introducing new products and services. Tata Swach, Tata Nano and GE MAC 400 are examples of affordable innovative products.

6. ENVISIONING FUTURE

Envisioning Future in Leading Innovative Organizations

‘Envisioning Future’ refers to the capabilities of highly innovative organizations to identify market trends ahead of the competition and design unique and innovative products to meet the evolving needs of customers. It also refers to the capabilities of innovative organizations to explore entirely new markets or set new trends and benchmarks for the rest of the industry. There are several similarities in the way in which leading innovative organizations envision future. The most prominent attributes were: 1. These organizations were constantly engaged in identifying “next innovative practices” that would impact their business and industry;

**Fig. 49: Envisioning Future Capabilities in Leading Innovative Organizations**

<table>
<thead>
<tr>
<th>Percentage of Respondents</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adept at identifying “next innovative practices”</td>
<td>53.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration to provide best prdt/srvc helps overcome constraints</td>
<td>50.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrapolate future to build portfolio of products and services</td>
<td>43.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use 360-degree framework to tap ideas from all stakeholders</td>
<td>36.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create many avenues for consumers &amp; orgn. to co-create value</td>
<td>36.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Open innovation” helps free resources for innovation</td>
<td>34.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use web 2.0 technologies to tap new sources for ideas</td>
<td>32.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. The aspiration to provide best product or service enabled them to overcome constraints of resources; and 3. They extrapolated future scenarios to build portfolio of products and services.

It is evident from the above graph that even among the leading innovative organizations there is room for improvement. One of the areas that deserves special attention is how to get and utilize the best ideas from within and outside the organization. Some of these organizations are reticent to adapt open innovation. These organizations could benefit a great deal by paying special attention to collaborating actively with experts outside the organizations. They could be external research centers, universities government research agencies, suppliers, distributors, customers and even competitors. There are a number of avenues and channels available through which these organizations can interact with people outside by using web 2.0 technologies and platforms like R&D, marketing, design and idea, social networks and blogs among others. They can also explore practices like customer co-creation, crowd sourcing, crowd funding and peer production to design and develop unique and superior products and services.

**Impact of Envisioning Future on Performance of Leading Innovative Companies**

The research revealed that there is a significant correlation between ‘Envisioning Future’ and the performance of innovative organizations. Organizations with strong envisioning capabilities have demonstrated the ability to design, develop and launch innovative products consistently.

Infosys, D&B, GE and Google have exhibited excellent capabilities to understand market trends ahead of their competition. This crucial ability has enabled them to introduce cutting edge products and services that are superior to their competitors’ offerings. Some of the
most successful products of Infosys are Finacle, Wallet Edge and Flypp. D&B’s successful products are Duns Number, Hoover’s Business Directory and D&B360.

GE’s successful products include Vscan, MAC series of ECG machines and Venue 40. Some of Google’s most successful products are Gmail, Google search engine, Google Maps, Android OS and Chrome browser.
This study reveals that ‘Envisioning Future’ has a significant and positive impact on organizations’ ability to introduce innovative products on a sustained basis. The figure 51 reveals that there is a significant correlation between ‘Envisioning Future’ and ‘Product Innovations’.

A multiple regression analysis was conducted to study the impact of ‘envisioning future’ on innovation abilities of leading innovative organizations. The analysis revealed that were focused on identifying trends ahead of the competition and adopting ‘next practices’ demonstrated superior innovation capabilities. The superior innovative abilities enable these organizations to introduce unique new products on a consistent basis.

**Independent Variables:**

- Envisioning Future (EF)
- Product Innovation Companies (PRODINCO)
- Process Innovation Companies (PROCINCO)
- Number of Employees (normalized) (NOE_N)
- Age of the Organization (normalized) (AGE_N)

**Dependent variable:** Number of Ideas from Customers (NICU)

The regression analysis showed that there was strong impact on – ‘number of ideas from customers’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 93 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

---

19 Please refer to questionnaire in Appendix

20 Please refer to Innometer in Appendix
Table 16: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations - Number of Ideas from Customers

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NICU

<table>
<thead>
<tr>
<th>Coefficients&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NICU

Since P value is .070 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from customers’ was accepted.

The analysis revealed that ‘envisioning future’ had the most significant impact (t = 2.934) on the ability to collaborate with customers at a 98 percent confidence level, indicating that organizations that have the ability to identify trends ahead of the competition are adept at sourcing the best ideas from users of the organization’s products and services to develop new and superior products.
**Dependent variable:** Number of Ideas from Academia (NIAC)\(^{21}\)

The regression analysis showed that there was strong impact on – ‘number of ideas from academia’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 93 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

**Table 17: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations - Number of Ideas from Academia**

```
Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.793*</td>
<td>.629</td>
<td>.423</td>
<td>.315</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.510</td>
<td>5</td>
<td>.302</td>
<td>3.052</td>
<td>.070*</td>
</tr>
<tr>
<td>Residual</td>
<td>.890</td>
<td>9</td>
<td>.099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.400</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIAC

b. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-3.865</td>
<td>2.317</td>
<td></td>
<td>-1.668</td>
</tr>
<tr>
<td>EF</td>
<td>2.743</td>
<td>.935</td>
<td>.712</td>
<td>2.934</td>
</tr>
<tr>
<td>NOE_LN</td>
<td>.028</td>
<td>.060</td>
<td>.142</td>
<td>.469</td>
</tr>
<tr>
<td>AGE_LN</td>
<td>.098</td>
<td>.149</td>
<td>.238</td>
<td>.655</td>
</tr>
<tr>
<td>PRODINCO</td>
<td>.206</td>
<td>.251</td>
<td>.228</td>
<td>.821</td>
</tr>
<tr>
<td>PROCINCO</td>
<td>.180</td>
<td>.309</td>
<td>.212</td>
<td>.583</td>
</tr>
</tbody>
</table>

a. Dependent Variable: NIAC

Since P value is .070 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of ideas from academia’ was accepted.

---

\(^{21}\) Please refer to Innometer in Appendix
The analysis revealed that ‘envisioning future’ had the most significant impact \( t = 2.934 \) on the ability to collaborate with premier academic institutions across the world at a 98 percent confidence level, indicating that organizations that have the ability to identify trends ahead of the competition are adept at collaborating with academic research centers to conduct research on frontier areas of technology.

**Dependent variable:** Number of New Products and Services Introduced in Previous Year (NNPL1Y)\(^{22}\)

The regression analysis showed that there was strong impact on – ‘number of new products and services introduced in previous year’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 98 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

### Table 18: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations - Number of New Products and Services Introduced in Previous Year

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.874*</td>
<td>.763</td>
<td>.632</td>
<td>48.305</td>
<td></td>
</tr>
<tr>
<td>a. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ANOVA\(^{a}\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>67733.385</td>
<td>5</td>
<td>13546.677</td>
<td>5.806</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>20999.949</td>
<td>9</td>
<td>2333.328</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>88733.333</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Dependent Variable: NNPL1Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Coefficients\(^{a}\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-1013.483</td>
<td>355.794</td>
<td>-2.849</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>378.690</td>
<td>143.589</td>
<td>.511</td>
</tr>
<tr>
<td></td>
<td>NOE_LN</td>
<td>12.313</td>
<td>9.214</td>
<td>.323</td>
</tr>
</tbody>
</table>

\(^{22}\) Please refer to Innometer in Appendix
Since P value is .011 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘number of new products and services introduced in previous year’ was accepted.

The analysis revealed that ‘envisioning future’ had the most significant impact (t = 2.637) at a 93 percent confidence level, on the ability to introduce new innovative new products that meet and exceed customers’ expectations. The analysis indicated that ‘envisioning future’ had a stronger impact on the innovative abilities of organizations excelling in product innovation in comparison with organizations excelling in process and business model innovation.

**Dependent variable:** Profit Contribution from New Products and Services Introduced in Previous Two Years (PCNPSL2YP)

The regression analysis showed that there was strong impact on – ‘Profit contribution from new products and services introduced in previous two years’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 91 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

---

23 Please refer to Innometer in Appendix
Table 19: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations - Profit Contribution from New Products and Services Introduced in Previous Two Years

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.881a</td>
<td>.776</td>
<td>.552</td>
<td>9.115</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, EF, NOE_LN, PRODINCO, AGE_LN

<table>
<thead>
<tr>
<th>ANOVA*</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1439.107</td>
<td>5</td>
<td>287.821</td>
<td>3.464</td>
<td>.099b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>415.439</td>
<td>5</td>
<td>83.088</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1854.545</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: PCNPSL2YP
b. Predictors: (Constant), PROCINCO, EF, NOE_LN, PRODINCO, AGE_LN

<table>
<thead>
<tr>
<th>Coefficients*</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-207.321</td>
<td>81.878</td>
<td>-2.532</td>
<td>.052</td>
</tr>
<tr>
<td></td>
<td>EF</td>
<td>102.809</td>
<td>32.440</td>
<td>.813</td>
<td>3.169</td>
</tr>
<tr>
<td></td>
<td>NOE_LN</td>
<td>-2.46</td>
<td>1.908</td>
<td>-.031</td>
<td>-.129</td>
</tr>
<tr>
<td></td>
<td>AGE_LN</td>
<td>2.318</td>
<td>4.788</td>
<td>.155</td>
<td>.484</td>
</tr>
<tr>
<td></td>
<td>PRODINCO</td>
<td>20.185</td>
<td>8.200</td>
<td>.748</td>
<td>2.462</td>
</tr>
<tr>
<td></td>
<td>PROCINCO</td>
<td>9.062</td>
<td>9.415</td>
<td>.348</td>
<td>.962</td>
</tr>
</tbody>
</table>

a. Dependent Variable: PCNPSL2YP

Since P value is .099 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘Profit contribution from new products and services introduced in previous two years’ was accepted.

The analysis revealed that ‘envisioning future’ had the most significant impact (t = 3.169) at a 97 percent confidence level, on the ability to introduce new innovative new products and services that offer superior value to customers. The analysis indicated that ‘envisioning future’ had a stronger impact on the innovative abilities of organizations excelling in
product innovation in comparison with process and business model innovation group of organizations.

**Dependent variable:** Cost Savings from Innovations Introduced in Previous Year (CSDILYP)

The regression analysis showed that there was strong impact on – ‘cost savings from innovations introduced in previous year’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 91 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

**Table 20: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations - Cost Savings from Innovations Introduced in Previous Year**

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.772a</td>
<td>.596</td>
<td>.372</td>
<td>1.015</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

<table>
<thead>
<tr>
<th>ANOVAa</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>13.670</td>
<td>5</td>
<td>2.734</td>
<td>2.656</td>
<td>.096b</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>9.263</td>
<td>9</td>
<td>1.029</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>22.933</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: CSDILYP

b. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

<table>
<thead>
<tr>
<th>Coefficientsb</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>-.5.973</td>
<td>7.473</td>
<td>-.799</td>
<td>.445</td>
</tr>
<tr>
<td>EF</td>
<td></td>
<td>6.164</td>
<td>3.016</td>
<td>.518</td>
<td>2.044</td>
</tr>
<tr>
<td>NOE_LN</td>
<td></td>
<td>.183</td>
<td>1.94</td>
<td>.298</td>
<td>.945</td>
</tr>
<tr>
<td>AGE_LN</td>
<td></td>
<td>.163</td>
<td>.481</td>
<td>.128</td>
<td>.339</td>
</tr>
<tr>
<td>PRODINCO</td>
<td></td>
<td>1.328</td>
<td>.810</td>
<td>.475</td>
<td>1.639</td>
</tr>
<tr>
<td>PROCINCO</td>
<td></td>
<td>-.301</td>
<td>.996</td>
<td>-.115</td>
<td>-.303</td>
</tr>
</tbody>
</table>

a. Dependent Variable: CSDILYP

b. Predictors: (Constant), PROCINCO, EF, PRODINCO, NOE_LN, AGE_LN

24 Please refer to Innometer in Appendix
Since P value is .096 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘cost savings from innovations introduced in previous year’ was accepted.

The analysis revealed that ‘envisioning future’ had the most significant impact (t = 2.044) at a 92 percent confidence level, on the ability to introduce new innovative new products and services that offer superior value to customers. The analysis indicated that ‘envisioning future’ had a stronger impact on the innovative abilities of organizations excelling in product innovation in comparison with process and business model innovation group of organizations.

**Dependent variable:** Return on Investment from New Products and Services Introduced in Previous Year (ROINPSLYP)

The regression analysis showed that there was strong impact on – ‘Return on Investment from new products and services introduced in previous year’ (dependent variable). The innovation capabilities of innovative organizations showed an acceptance at 91 percent confidence level indicating that ‘envisioning future’ was a major determinant of successful innovation.

**Table 21: Impact of Envisioning Future on Performance of Leading Innovative Organizations Collaborations – Return on Investment from New Products and Services Introduced in Previous Year**

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.884(^a)</td>
<td>.781</td>
<td>.562</td>
<td>.893</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), PROCINCO, EF, NOE_LN, PRODINCO, AGE_LN

\(^{25}\) Please refer to Innometer in Appendix
Since P value is .095 (<.10) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable was rejected. The alternate hypothesis that the independent variables have a significant impact on the dependent variable ‘Return on Investment from new products and services introduced in previous year’ was accepted. The analysis revealed that ‘envisioning future’ had the most significant impact (t = 3.395) at a 98 percent confidence level, on the ability to introduce innovative products and services that offer superior value to customers. The analysis indicated that ‘envisioning future’ had a stronger impact on the innovative abilities of organizations excelling in product innovation in comparison with process and business model innovation group of organizations.

**INNOVATION CULTURE**

**Innovation Culture in Leading Innovative Organizations**

All organizations want to embrace innovation and benefit from its rewards. However, innovation is a challenging proposition and many organizations fail to achieve the desired
results. In order to nurture innovation in an organization, the culture should encourage agility, nimbleness, and allow itself to experiment and adapt to a learning environment. The culture should tolerate failures and encourage people to learn from failures, it must seek to balance between investing in the future and delivering value in the present. A culture of innovation should not only be able to constantly generate new ideas but also have the capability to commercialize the best ones.

Google, Dun & Bradstreet, Moser Baer, and GE have demonstrated that a positive and encouraging innovation culture plays a major role in enabling them to convert ideas to unique, innovative and superior products on a continuous basis. This capability has also resulted in these organizations becoming leaders and trendsetters in their respective industries. These organizations show that giving importance to nurturing an innovation culture has a strong positive impact on their performance.
Nurturing a positive innovation culture enables organizations like Infosys, Microsoft, Sri Sathya Sai Institute of Higher Medical Sciences, Narayana Hrudalayala, IBM, HP, Tata, Fabindia, Akshaya Patra, EMRI and Gyanshala to excel and lead in their respective fields. These organizations share an obsession in caring for their employees and provide an encouraging work environment. They undertake several initiatives on a continuous basis to ensure that employees are constantly encouraged and motivated to perform better. They introduce several initiatives to keep their employees happy by ensuring that their family concerns are well taken care of. These initiatives work as strong motivating factor and encourage employees to give their best to their organizations.
The care and concern showed by these organizations to their employees eventually results in their ability to focus more on their work in a happy environment which results in creativity to introduce new and innovative products and services that surprise, amaze and delight customers. This often leads to increasing customer confidence and loyalty towards these organizations which leads to consistent superior performance of these organizations on a long term basis.

**Multiple Regressions with Innovation Culture**

A multiple regression analysis was conducted to study the innovation culture characteristics of highly innovative organizations. The companies were classified into three categories: Product, Process and Business Model Innovation organizations. The analysis revealed that there was a strong correlation between organization culture and innovation capabilities of these organizations irrespective of the category that they belong to.
Independent Variables:

Innovation Culture (IC)\textsuperscript{26}

Product Innovation Companies (PRODINCO)

Process Innovation Companies (PROCINCO)

Number of Employees (normalized) (NOE\textsubscript{N})

Age of the Organization (normalized) (AGE\textsubscript{N})

**Dependent Variable:** Number of Ideas from Customers (NICU)\textsuperscript{27}

The regression analysis showed that there was significant positive impact on – ‘number of ideas from customers’ (dependent variable). The innovation capabilities of all three types of innovative organizations: Product, Process and Business Model showed a strong acceptance at 98 percent confidence level indicating that innovation culture was a major determinant of successful innovation.

**Table 22: Impact of Innovation Culture on Performance - Number of Ideas from Customers**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>a. Predictors: (Constant), PROCINCO, IC, NOE\textsubscript{LN}, AGE\textsubscript{LN}, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA\textsuperscript{a}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>a. Dependent Variable: NICU</td>
</tr>
<tr>
<td>b. Predictors: (Constant), PROCINCO, IC, NOE\textsubscript{LN}, AGE\textsubscript{LN}, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients\textsuperscript{b}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>IC</td>
</tr>
<tr>
<td>NOE\textsubscript{LN}</td>
</tr>
<tr>
<td>AGE\textsubscript{LN}</td>
</tr>
</tbody>
</table>

\textsuperscript{26} Please refer to questionnaire in Appendix

\textsuperscript{27} Please refer to Innometer in Appendix
Since P value is .026 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable is rejected. The alternate hypothesis that the independent variables have a significant impact on ‘number of ideas received from customers’ is accepted. Among the independent variables selected, ‘innovation culture’ had the most significant impact (t = 3.696) on the ability to collaborate in highly innovative organizations. The culture in these organizations encourages people to collaborate with and involve customers at every stage of product development. This helps to identify customer’s needs very early in the product development process. It also helps to dynamically alter the product during various stages of development based on the evolving needs of the customers. Google, IBM and Microsoft regularly introduce beta versions of their products to customers who can use them and provide feedback to improve the products and services.

**Dependent Variable: Number of Ideas from Academia (NIAC)**

The independent variables account for 71.2 percent of total variance in the dependent variable ‘number of ideas from academia’. Innovation culture has a significant positive impact at 98 percent significance level on the ability of innovative organizations to network with external academic institutions to enhance their innovation capabilities.

### Table 23: Impact of Innovation Culture on Performance - Number of Ideas from Academia

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.844(^a)</td>
<td>.712</td>
<td>.552</td>
<td>.277</td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO

\(^{28}\) Please refer to Innometer in Appendix
Since P value is .026 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable is rejected. The alternate hypothesis that the independent variables have a significant impact on ‘number of ideas from academia’ is accepted.

The culture in innovative organizations encourages the people in the organizations to seek the best ideas not only from within the organization but also to collaborate with reputed academic institutions to share ideas and gain new perspectives on how to meet the various challenges facing their organizations. Google, GE, HP, IBM, Microsoft, Tata and Infosys have collaborations with premier academic institutions to conduct research in frontier areas of technology. Google is conducting research and field tests with driverless cars, GE and Tata are working on various fuel cell technologies to power future generation vehicles.

Culture has the most significant impact (t = 3.696) on the ability to innovate in highly innovative organizations.
Dependent variable: Number of New Products and Services Introduced in Previous Year (NNPL1Y)\(^{29}\)

The regression analysis showed that there was significant positive impact on – ‘number of new products and services introduced in previous year’ (dependent variable). The innovation capabilities of all three types of innovative organizations: Product, Process and Business Model showed a strong acceptance at 99 percent confidence level indicating that ‘innovation culture’ was a major determinant of successful innovation.

**Table 24: Impact of Innovation Culture on Performance - Number of New Products and Services Introduced in Previous Year**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>a. Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>a. Dependent Variable: NNPL1Y</td>
</tr>
<tr>
<td>b. Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Since P value is .007 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable is rejected. The alternate hypothesis

\(^{29}\) Please refer to Innometer in Appendix
that the independent variables have a significant impact on ‘number of new products and services introduced in previous year’ is accepted.

The analysis revealed that both large and small organizations can benefit from the innovative talent among the employees when the culture in these organizations supports and nourishes innovation. In the table above it can be noted that $t = 3.242$ for ‘number of employees’ in the organization and $t = 2.958$ for ‘innovation culture’ in the organization indicating that the culture in innovative organizations had a strong positive impact on their ability to introduce new products on a consistent basis. Innovative companies constantly strive to serve the needs of their customers in better ways through innovations in existing products and by introducing new products with better features which offer greater conveniences to the customers. Innovative companies like GE, Google, HP, IBM, Tata and Dun & Bradstreet introduce more than 200 products on an average every year.

**Dependent Variable:** Profit Contribution from New Products and Services Introduced in Previous Two Years (PCNPSL2YP)$^{30}$

The analysis showed that at 99 percent confidence level, the independent variables had a significant impact on – ‘profit contribution from new products/services introduced in previous two years’ (dependent variable). The independent variables accounted for 88 percent of total variance on the dependent variable.

**Table 25: Impact of Innovation Culture on Performance - Profit Contribution from New Products and Services Introduced in Previous Two Years**

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

$^{a}$ Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO

$^{30}$ Please refer to Innometer in Appendix
### ANOVA*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1744.631</td>
<td>5</td>
<td>348.926</td>
<td>15.873</td>
<td>.004*</td>
</tr>
<tr>
<td>Residual</td>
<td>109.914</td>
<td>5</td>
<td>21.983</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1854.545</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a. Dependent Variable: PCNPSL2YP  
*b. Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO

### Coefficients*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-514.384</td>
<td>78.288</td>
<td></td>
<td>-6.575</td>
</tr>
<tr>
<td>IC</td>
<td>218.359</td>
<td>30.322</td>
<td>.962</td>
<td>7.201</td>
</tr>
<tr>
<td>NOE_LN</td>
<td>5.147</td>
<td>1.109</td>
<td>.658</td>
<td>4.641</td>
</tr>
<tr>
<td>AGE_LN</td>
<td>-4.625</td>
<td>2.063</td>
<td>-.309</td>
<td>-2.242</td>
</tr>
<tr>
<td>PRODINCO</td>
<td>5.735</td>
<td>4.573</td>
<td>.212</td>
<td>1.254</td>
</tr>
<tr>
<td>PROCINCO</td>
<td>5.028</td>
<td>4.952</td>
<td>.193</td>
<td>1.015</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: PCNPSL2YP

Since P value is .004 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable is rejected. The alternate hypothesis that the independent variables have a significant impact on ‘profit contribution from new products/services introduced in previous two years’ is accepted.

The analysis revealed that among the independent variables, ‘innovation culture’ had the highest impact (t = 7.201) on the ability innovative organizations to introduce successful new products on a consistent basis. Many prior research studies have shown that companies by and large have a difficult time in introducing successful new products. Studies have shown that nearly 70 percent of new products introduced fail to succeed in the marketplace.

Leading innovative companies have demonstrated the ability to not only introduce new products on a consistent basis, but also ensure that they offer superior value to the customers. The success rate of innovations in these companies is about 80 percent. The ability to keep the product pipeline young and healthy leads to increased profits from innovations.
Dependent Variable: Cost Savings from Innovations Introduced in the Previous Year (CSDILYP)\(^{31}\)

The regression analysis showed that there was significant positive impact on – ‘cost savings from innovations introduced in the previous year’ (dependent variable). The innovation capabilities of all three types of innovative organizations: Product, Process and Business Model showed a strong acceptance at 96 percent confidence level indicating that organization culture was a major determinant of cost savings due to innovation.

Table 26: Impact of Innovation Culture on Performance - Cost Savings from Innovations Introduced in the Previous Year

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>a. Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>a. Dependent Variable: CSDILYP</td>
</tr>
<tr>
<td>b. Predictors: (Constant), PROCINCO, IC, NOE_LN, AGE_LN, PRODINCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1</td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>a. Dependent Variable: CSDILYP</td>
</tr>
</tbody>
</table>

Since P value is .041 (<.05) null hypothesis stating that there is no significant impact by the independent variables on the dependent variable is rejected. The alternate hypothesis

---

\(^{31}\) Please refer to Innometer in Appendix
that the independent variables have a significant impact on ‘cost savings from innovations in the previous year’ is accepted. Leading innovative organizations have demonstrated the ability to significantly reduce costs of introducing new products and services. The innovation culture in these organizations has a significant impact \( t = 2.724 \) in encouraging employees to contribute towards improving the efficiency of performance in these organizations. Innovative organizations not only strive to offer superior products with better features, they also constantly strive to reduce the costs of the products and services to offer better value to customers. GE’s new range of portable ECG machines are nearly 80 percent less expensive than conventional ECG machines; Tata Nano and Tata Swach are priced 50 percent lower than their nearest competitors.