

## Profiling Intrapreneurs to Develop Management Interventions:

### Evidence from Sri Lanka

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#### Abstract

Intrapreneurship, defined as the entrepreneurial behaviour of employees in established firms, has received growing research and practitioner attention. Despite increased efforts to develop and promote intrapreneurial behaviour, little is known about characteristics differentiating high intrapreneurs from low intrapreneurs. This research attempts to understand if and how intrapreneurs differ based on their demographic characteristics.

Using intrapreneurship data collected from 329 middle level employees from Sri Lanka, we first carried out K-mean cluster analysis. The results suggest that the respondents belong to two significantly different ( $p = 0.000$ ) clusters. Around 65% of our respondents belong to high intrapreneurship cluster while the remainder belong to low intrapreneurship cluster. We then carried cross tabulation analysis to derive demographic profiles for each cluster based on age, years of experience, industry, educational qualifications, and gender. The standardized residuals revealed that females are significantly higher (than expected frequency) in low intrapreneurship cluster and significantly lower in high intrapreneurship cluster.

Overall, gender reveals to be a significant differentiator between intrapreneurship clusters. Our findings contribute to theory by providing novel insights on demographic profiles related to intrapreneurship. From practitioners' perspective, it suggests that management interventions promoting intrapreneurial behaviour in organisations should specifically target females.

**Keywords:** Intrapreneur, Demographic profile, K-mean cluster analysis, Cross tabulation, management interventions

#### INTRODUCTION

Intrapreneurship, referred to as the entrepreneurial behaviour of individual employees within established firms (Pinchot III, 1985), has received growing scholarly and practitioner interest. Intrapreneurs recognise the opportunity for change, evaluate them and exploits them, with the belief that this exploitation of the new pathway will lead to organisational goal achievement (Felicio, et al., 2012). Therefore, it positively relates to individual employee level outcomes such as job performance (Ahmad, et al., 2012), feedback seeking, (De Jong, et al., 2011), and

organisational outcomes such as new products/services, new methods, new entry, and new organisation creation (Felicio et al., 2012). Well known intrapreneurial examples include Kelly Johnson, who was an aeronautical systems engineer at Lockheed Skunk Works – USA, developing Lockheed Martin-Engine. His contribution to jet engine industry, by putting his novel ideas into action, gave him immense recognition, and also improved organisational performance. Similarly, Ken Kutaragi (also known as the father of Play Station) who later became the CEO of Sony Computer Entertainment, first joined Sony as a fresh graduate. His novel thinking and proactiveness in identifying opportunities for solving problems, made him one of the most valuable employees at Sony. Therefore, intrapreneurship is a way of revitalizing and rejuvenating firms.

Despite the interest in promoting intrapreneurship in organisations, the research in intrapreneurship has paid limited attention to the need to develop customised interventions to promote intrapreneurship (e.g. Kuratko & Rao, 2012; Brunaker&Kurvinen, 2006). This knowledge gap is significant for two primary reasons. First, as mentioned earlier, intrapreneurship can result in a great array of individual and organisational benefits. Therefore, a detailed understanding of if and how the degree of intrapreneurship demonstrated by employees differ will have useful implications to theory and practice. Second, innovative companies (e.g. 3M and Google, as explained in the proceeding section) invest a large proportion of resources to foster a culture of intrapreneurism. Identifying if a particular employee group(s) require customised managerial interventions may assist better utilisation of such resource allocations.

Against this backdrop, our study focuses on understanding if employees can be profiled based on the degree of intrapreneurship demonstrated by them. Adopting a quantitative non-parametric approach, we analyse the data collected from 329 middle level employees in Sri Lanka. Our analysis suggests respondents can be categorised to two significantly different clusters based on the intrapreneurship demonstrated. Furthermore, females were found to have a significantly high level of presence in the low intrapreneurship cluster. Overall, our findings draw new insights to theory and practice.

The remainder of this paper is structured as follows: First the literature related to intrapreneurship, developing management interventions, and profiling for targeted interventions are revisited to understand and further establish the grounds for our study. Second the method of data collection and analysis is presented along with the key findings. Third, the implications to theory and practice are discussed along with directions for future research.

## LITERATURE REVIEW

### Intraprenurship (INT)

We define intraprenurship as the entrepreneurial behaviour of an individual or a group of people whom are passionately involved in entrepreneurial activities while residing inside the organisation (Pinchot III, 1985). Established large corporations often have access to resources and capable individuals. Such corporations encourage employees who are enthusiastic for entrepreneurship, by giving them time and freedom to implement and take leadership on their own ideas, and thereby promote intraprenurship (Pinchot III, 1985). The research suggests three behavioural approaches in intraprenurship namely, pursuit of entrepreneurial opportunity, new entry, and new organisation creation (Bosma, et al., 2012).

Since intrapreneurship is a school within entrepreneurship theory (Cunningham & Lischeron, 1991), we draw from the entrepreneurship literature to get an in-depth understanding of intrapreneurship. The behavioural approach to entrepreneurship (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Shane & Venkataraman, 2000) conceptualises entrepreneurship as a three-dimensional construct consisting of *innovativeness* (engage in and support new ideas, novelty, experimentation), *pro-activeness* (opportunity-seeking, forward-looking behaviour) and *risk-taking* (committing significant resources to ventures in uncertain environments). Accordingly, we conceptualise intrapreneurship as an individual behaviour within established firms, where the individual demonstrates innovativeness, pro-activeness and risk-taking behaviour.

While the similarity between entrepreneurship and intraprenurship is identified, these are conceptually different phenomena. Entrepreneurship is identified as creation of new resources or combining the resources in a new manner to create value and to capitalize on opportunities, identified in start-ups or small and medium enterprises (Shane & Venkataraman, 2000). Contrast to this, intrapreneurship refers to a behaviour of individuals whom are passionate on entrepreneurial effort while residing and executing it inside the established organisations (Pinchot III, 1985).

Intrapreneurial behaviour of employees indicates an organisation's ability to create new ideas, technologies, technological processes (Lumpkin & Dess, 1996), and creation and exploration of opportunities (Bruyat & Julien, 2001), leading to organisational value creation.

Intrapreneurship therefore leads to operational and market advantage, resistance against competitive forces (Brunaker&Kurvinen, 2006) and also talent retention (Kuratko & Rao, 2012). Overall, the literature suggests that entrepreneurial attitude and behaviours of an employee is a necessity for firm success in competition (Barringer&Bluedorn, 1999). It not only improves individual performance (Guth& Ginsberg, 1990) and but also contribute to organisational performance (Antoncic&Hisrich, 2001).

### **Management Interventions (MI) Fostering Intrapreneurship**

Understanding the importance of intrapreneurship, organisations have created multiple programs, policies, and practices to encourage and promote intrapreneurship. For instance, 3M fosters intrapreneurship by providing moral and financial support to take risk and venture into new areas as well as recognition for individual innovation successes (3M Company, 2002). This has paved the way for many successes such as the introduction of light control films (by Andy Wong) and sticky notes (by Art Fry) (Bosmaet *al.*, 2013). Similarly, Google follows an entrepreneurial innovation model, in which the entire organisation fosters and supports the entrepreneurial behaviour of employees. Some of their salient features are the flat organisational structure, the '20 percent time' policy, where employees get 20 percent of their paid time to work on a project of their preference, an open development environment which makes knowledge sharing easier and generous rewards and recognition for successful employees (Copeland & Savoia, 2011). These characteristics make Google's work environment similar to that of a start-up company. The literature in general suggests that access to resources, autonomy, professional freedom, respect, and recognition, as factors encourage intrapreneurial behaviour.

However, the motivation literature suggests that every employee is different and thus gets motivated by different factors (Burton, 2012; Ganta, 2014). It therefore highlights the need for customised approach to encourage desirable employee behaviours. However, the intrapreneurship literature has paid little to no attention on developing customised interventions for intrapreneurship development. Considering the pivotal role management interventions can play in encouraging intrapreneurship, yet limited scholarly attention, we next focus on the need to develop customised management interventions.

Management interventions are management's actions to intervene and override prescribed policies or procedures for a legitimate purpose (Department of Finance & Management, 2015). This action is a necessity for dealing with non-recurring or non-standard

actions or events and handles inefficiently in the normal system (Department of Finance & Management, 2015). In the context of intrapreneurship, such interventions may go beyond generic approaches to fostering intrapreneurship to customised approaches identifying and encouraging those employees demonstrating low levels of intrapreneurship.

The literature in management interventions (e.g. Mikkelsen, et al., 2015) suggests that there are two approaches to interventions namely, soft and hard approaches. The soft approach, which is based on dialogue and suggestion, is generally identified to be better than hard approach, which is based on use of directives, monitoring, and threats of punishment, in the context of promoting intrapreneurship in particular. Such an approach may involve one-to-one discussions (to open up employee ideas and concerns), avoiding temporary fixes (and opt to training and development) and help building employee trust (for your leadership and care) (Augustine, 2013).

However, as mentioned earlier, the success of such interventions in organisational context depends on the management's ability to appropriately customise interventions to match the targeted employees. Therefore, profiling employees, the area which we focus on next, is an essential first step in the process of developing management interventions.

### **Profiling employees for customised interventions**

Profiling is primarily used in market research to identify market segments (Diamantopoulos, et al., 2003). It provides a detailed picture of typical members of a segment (Lötter, et al., 2012) and thereby assist development of customised marketing campaigns. The literature suggests that the same can be effectively used in managing employees (Anand & Sharma, 2015). For instance, profiling and clustering employee based on their demographic characteristics and then developing targeted management interventions for each of the group are found to not only improve employee performance, feeling of containment, and job satisfaction, but also improve organisational performance and goal achievement (Anand & Sharma, 2015).

Despite increase in the use of demographic profiling to develop managerial interventions (Diamantopoulos et al., 2003), no known attempt has been made to profile employees based on the level of intrapreneurship, in Sri Lankan context in particular. Hence, our attempt to profiling intrapreneurial employees will assist organisations in fostering intrapreneurship in respective organisations.

## METHODOLOGY

### Sample and data collection

This research attempts to explain on the differentiation intrapreneurs present, based on their demographic characteristics. Considering this explanatory nature, we adopted a quantitative approach in this study (Muijs, 2004).

Demonstrating intrapreneurship requires some level of autonomy and resources (Kuratko et al, 2005), therefore we focused on the intrapreneurial behaviour of middle level employees. Since intrapreneurship takes place in large-scale organisations, the respondents were selected from Sri Lankan business organisations with over 100 employees and also have multiple branches and Strategic Business Units (SBU). Data were gathered from forty (40) different business organisations representing apparel, ICT, banking, cargo, hospitality, and automobile industries.

Data collection was carried out using a mail based self-administered survey questionnaire. The sampling technique used is convenience sampling; this is a non-probability sampling which involves collection of data from members of the population who are conveniently available (Sekaran & Bougie, 2010). The middle level managers were first contacted to get their informed consent to take part in our survey. Those who consented to participate received the questionnaire along with a reply paid envelop. Each response was received by us in a sealed envelope.

### Measurements

**Intrapreneurship:** intrapreneurship was measured using the three-dimensional (innovation, risk taking, and pro-activeness) scale developed by Stull (2005), which has been validated in multiple subsequent studies (e.g. Ahmed, Ali & Ramzan, 2014; Valsania, *et al.*, 2014). Each dimension consists of five question items, measured on a five-point Likert scale ranging from 'Strongly agree' to 'Strongly disagree'. For example, risk taking dimension included items such as "*I engage in activities at work that could turn out wrong*", innovation items included "*I develop new processes, services or products*", and proactiveness items included "*I anticipate future problems, needs, or changes*". Subsequent analysis of validity and reliability using content validity, discriminant validity and composite reliability (CR) showed that while the measurement achieved content and discriminant validity, CR was 0.78 which fulfilled the reliability requirement as well (Hair et al., 2010).

**Demographic data:** Demographic data and the sub categories were identified by the previous studies done on demographics of employees (Lötter, et al., 2012; Anand & Sharma, 2015) and categories used in national surveys in Sri Lanka (e.g. Department of Census and Statistics Sri Lanka, 2015) targeted at the workforce. This included work experience, age, gender, highest education qualification, and marital status.

## ANALYSIS

### Sample statistics and initial analysis

From the 405 who consented to participate, we received 329 valid responses (81% response rate). IBM SPSS 20.0 software was used for the initial analysis of the data. Since missing data was less than 0.7%, those were imputed using Expectation maximisation (EM) method which gives reasonably consistent estimate to variables (Hair et al., 2010). Outliers were analysed using box plots (Hair et al., 2010), and found that there are no consistent outliers. Furthermore, having extreme points are normal in social science research and therefore none of the outlier responses were deleted.

The initial descriptive analysis presented in Table 1 reveals that closer to 70% of the participants are Male. Over 75% of the participants are below 31 years old. Over 60% of the participants have a degree or a postgraduate qualification.

**Table 1: Demographic data**

Characteristics of the sample		Percentage
Gender	Male	69.5%
	Female	30.5%
Age	20-25 Years	21.4%
	26-30 Years	46.1%
	31-40 Years	24.1%
	Over 40 Years	7.8%
Marital Status	Married	45.3%
	Unmarried	54.7%
Highest educational qualification	A/L	11.1%
	Diploma	25.9%
	Bachelors	50.6%
	Masters	12.3%
	0 – 5 Years	69.5%

Number of years in the present job	6-10 Years	19.3%
	11-15 Years	4.9%
	Over 15 Years	6.2%

### Clustering and profiling

We used *K-means cluster analysis* to identify the segments of employees in terms of the level of intrapreneurship demonstrated by respondents. We examined two to four cluster solutions with the aim of maximising the number of clusters while avoiding very small segments with less than 10 per cent of the total number of employees (Everitt, 1974; Chetthamrongchai & Davies, 2000). The two-cluster solution was found to be the most appropriate, which has divided our sample in to low intrapreneurship and high intrapreneurship. The analysis of variance (ANOVA) statistics revealed that respondents belong to two significantly different ( $p = 0.000$ ) clusters.

We then used cross tabulation analysis to identify the differences in demographic characteristics between the two clusters. As indicated in Table 2, we used standardized residual analysis to identify how each demographic category within demographic item behaves with the low intrapreneurs and high intrapreneurs. The categories with standardised residual values beyond two standard deviations (i.e.  $< -1.96$  or  $> 1.96$ ) were identified to be significantly different (Haberman 1973).

Our analysis showed that 65% of the respondents belong to the high intrapreneurship cluster and 35% of the respondents belong to the low intrapreneurship cluster. In the cross tabulation while all other demographics was not presenting any significant differentiation, gender was showing a significant difference. In the low intrapreneurship cluster, gender distribution was 54% to 46% among males and females respectively. The standardised residual value of the female category is 2.4 (above 1.96) suggesting that females are significantly higher (than expected frequency) in low intrapreneurship cluster.

**Table 2: Cross tabulation for total sample**

Demographic Item	Category	Low Intrapreneurship		High Intrapreneurship	
		Average	Std. Res	Average	Std. Res
Experience in the current job	0-5 years	73.5%		65.3%	
	6-10 years	21.2%		22.2%	
	11-15 years	2.7%		4.6%	
	Over 15 years	2.7%		7.9%	
Age	20-25	23.9%		21.3%	
	26-30	40.7%		47.7%	
	31-40	31.9%		21.8%	
	Over 40	3.5%		9.3%	
Gender	Male	54.0%		74.1%	
	Female	46.0%	2.4**	25.9%	
Highest Education Qualification	A/L	15.9%		9.7%	
	Diploma	25.7%		23.6%	
	Bachelors	49.6%		52.3%	
	Masters	8.8%		14.4%	
Marital status	Married	38.1%		47.2%	
	Unmarried	61.9%		52.8%	

\*\*Only those with standardised residual values beyond two standard deviations (i.e.  $< -1.96$  or  $> 1.96$ ) have been reported.

We then moved in to industry based analysis of these clusters to get further insight. Our participants fall in to 6 categories of industries, which are *banking and finance* (12.8%), *hospitality* (1.8%), *information and communication technology* (51.4%), *logistics* (7.6%), *manufacturing* (14.3%) and *other* (12.2%). When the cross tabulation was executed, there was no significant difference in intrapreneurship based on differing categories of experience, age or marital status. However, gender and highest education qualification provided significant difference for the low intrapreneurship cluster in the information and communication technology (ICT) industry. Similar to the full sample, females in ICT industry showed residual value of 2.29 ( $> 1.96$ ) for low intrapreneurship suggesting that females are significantly higher (than expected frequency) in low intrapreneurship cluster.

**Table 3: Cross tabulation for ICT industry gender category**

Category	Low Intraprenurship		High Intraprenurship	
	Average	Std. Res	Average	Std. Res
Male	63.2%		84.8%	
Female	36.8%	2.29**	15.2%	

*\*\*Only those with standardised residual values beyond two standard deviations (i.e. < - 1.96 or >1.96) have been reported.*

When considering the highest education qualification in ICT industry, those who have A/L as the highest qualification showed residual value of 2.37 (> 1.96) for low intrapreneurship. This suggests that those who have A/L as the highest education qualification are significantly higher (than expected frequency) in low intrapreneurship cluster.

**Table 4: Cross tabulation for ICT industry Highest Education Qualification category**

Category	Low Intraprenurship		High Intraprenurship	
	Average	Std. Res	Average	Std. Res
A/L	10.5%	2.37**	0.9%	
Diploma	22.8%		22.3%	
Bachelors	59.6%		67.9%	
Masters	7.0%		8.9%	

*\*\*Only those with standardised residual values beyond two standard deviations (i.e. < - 1.96 or >1.96) have been reported.*

The overall analysis suggests that females and those who have A/L as highest education qualification are more significantly more likely to demonstrate low levels of intrapreneurial characteristics. Therefore, management interventions fostering intrapreneurship, in ICT industry in particular, should aim at improving intrapreneurial behaviour of respective clusters.

## DISCUSSION

Despite growing research and practitioner interest in intrapreneurship, management interventions targeting intrapreneurship development are generic in nature. No known attempts have been made to develop customised interventions in Sri Lankan context in particular.

Hence this study attempts to cluster employees based on the level of intrapreneurship demonstrated and thereby identify any significant demographic characteristics differentiating high intrapreneurs from low intrapreneurs. Such identification will assist development of customised intervention focused on each cluster. Our findings contribute to theory and practice as explained below.

### **Implications to theory**

Our study contributes to theory in three ways. First, it provides insights into demographic profiling of employees based on the level of intrapreneurship demonstrated by them. Our findings suggest that there are two significantly different clusters of intrapreneurial employees. While subsequent analysis did not find significant demographic characteristics differentiating high intrapreneurial employees, low intrapreneurial group reported significantly high levels of female presence. This stands in line with the previous studies done, where it was observed less active participation from women (Sullivan & Meek, 2012; Tsyganova & Shirokiva, 2010). Considering the growing interest and emerging knowledge around intrapreneurship as a conceptually distinct, practically significant phenomenon, our efforts in profiling intrapreneurs can facilitate advancement of intrapreneurship research.

Second, we use non-parametric testing to cluster and profile employees. Although such statistical techniques are used in multiple social science disciplines (e.g. Chetthamrongchai & Davies, 2000), it is rarely seen in human resource management context. Therefore, we make a methodological contribution to HRM literature by demonstrating how K-means cluster analysis and cross-tabulation techniques be used for clustering and profiling.

Third, being one of the early studies on intrapreneurship in Sri Lankan context, our study makes a substantial empirical contribution by highlighting that (a) intrapreneurship exists in Sri Lankan context, and (b) there is a significant difference in the level of intrapreneurship demonstrated by employees. Considering the male dominance in higher levels of management and in ICT industry in particular in Sri Lanka (Asian Development Bank, 2015; Jayaweera, et al., 2006), females seen to be less intrapreneurial may subsequently lead them to lower rewards and recognition and career progression opportunities compared to their male counterpart. That may threaten the employee diversity in ICT and other knowledge based jobs in the country. This can be identified as a reason to which some sectors have higher concentration of women than ICT (International Labour Office, 2016; Moss, 2004). Management interventions intended to promote intrapreneurship should pay careful attention to improve more female participation in intrapreneurial activities.

### **Implications to practice**

For practitioners, this study provides several crucial implications for promoting and harnessing intrapreneurship. One, this study provided strong evidence on existence of intrapreneurship in Sri Lankan workforce. This demands the attention of practitioners to change current employee motivational mechanisms and also see the opportunity in retaining such intrapreneurial employees to compete in a global market place. The HRM techniques that used traditionally might need to be tailored to suit the demand of retaining entrepreneurial employees in the organisations and continuously motivating them.

Second implication to practitioners is, there needs to be a high level of management intervention and support for the female employees in order to develop their intrapreneurial skills and mind set. Since female employees tend to be in low intrapreneurial but they consist a significant portion of modern labour force especially in Sri Lanka, management needs to put more investment and methods of improvement for female workforce intrapreneurial spirit. Rewards and recognitions might need to be customized in order to change the current approach in motivational support and increase the equality in gender wise intrapreneurial effort.

Third, for ICT industry professional in Sri Lanka, there are two implications from this study results. First, it is important females (as per the main analysis) to have management intervention and in the same level for those employees whom are only qualified up to A/L to have management attention on efforts put to uplift the low intrapreneurship to high intrapreneurship. Practitioners must specially create educational and knowledge enhancement plans to improve their educational standards while continuously promoting innovativeness, risk taking and proactiveness in them.

### **Limitations and directions for future research**

This study contains few limitations which needs to be highlighted. One is that our sampling method limits the generalizability of the findings of research. Elaborating on this, the study used forty-four (44) organisation with more than 100 employees, which are established at the Western province of Sri Lanka. Even though we can justify this by identifying the fact that the majority of economic activities are centred in Western province (Kelegama, 2016), generalizing needs to be done with necessary precautions. Second the study used the cross-sectional design and this limits the ability to capture the causal relationships (Guest 2011; Wright et al., 2005), even though this limitation was minimized by focusing on the retrospective data. Third, the study holds data from several industries which is having limitation

since findings of the study is influenced by the inherent nature and the competitiveness of each industry. This calls for industry-specific future research.

Future research can also consider the surveying in to other factors such as geographical or sociological characteristics as well. This can be further improved by having an industry specific profiling effort which will give clarity to the findings. Considering the benefits and stability captured in the longitudinal study design in testing causal relationships related to behaviours (Zahra &Covin, 1995), future researches needs to move in to longitudinal study for demographic profiling and intrapreneurship. Lastly, since research highlights on gender specific findings, future research on gender studies should re-look at gender specific intrapreneurial characteristics to gain clarity on methods of improvement for the intrapreneurial behaviour.

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