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Evaluating the extent of intrapreneurship in a sugar producing company in KwaZulu-Natal, South Africa

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MANAGEMENT | RESEARCH ARTICLE

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MANAGEMENT | RESEARCH ARTICLE

Evaluating the extent of intrapreneurship in a sugar producing company in KwaZulu-Natal, South Africa

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Abstract: The sugar industry in South Africa is currently facing immense challenges in the form of the sugar tax, growing negative consumer sentiment, climate change and cheap imported sugar. It is within this context that intrapreneurship can be embraced to inject vitality, flexibility, innovation and sustainability in firms in this sector. The objectives were to measure the intrapreneurial climate, determine its strengths and weaknesses as well as constraints, identify strategies to enhance the intrapreneurial culture and test their influence on intrapreneurial behaviour. This cross-sectional study assessed the extent of intrapreneurship in a major sugar producing company in South Africa using a sample of 110 managers and a self-administered online questionnaire. The findings revealed a low intrapreneurial climate, with the firm's weaknesses revolving around leadership style, structure, culture, systems and its core activities. Its strength lies in its managers that displayed high levels of entrepreneurial orientation. Capital availability, bureaucracy, resource availability, a poorly understood innovation process, lack of leadership



Zyven Rambakus

ABOUT THE AUTHORS

Zyven Rambakus graduated with a Bachelors in Technology: Chemical Engineering at the Durban University of Technology in 2004 and has spent time in both the motor and the sugar industry, managing operations at both refining and milling. Zyven graduated with his MBA, summa cum laude in 2018 and his areas of interest and competence include, supply chain management, organisational development and process optimisation.

Muhammad Hoque has been recognized as an Y2 rated researcher by the National Research Foundation of South Africa for the period of 2018–2022. In 2018, based on his research output, he was one of the top 10 young published researchers, and in 2017 was also among the top 30 published researchers (13th) as well as in the top 10 young published researchers (1st) at the UKZN.

Cecile N. Gerwel Proches is an Academic in the Graduate School of Business and Leadership at the UKZN in Durban, South Africa. Her research interests include leadership, organisational behaviour, systems thinking and complexity theory.

PUBLIC INTEREST STATEMENT

In recent years, the sugar industry in South Africa has been exposed to some serious challenges, threatening multiple company's competitiveness and long-term sustainability. Surmounting these challenges is vital as the broader sugar industry plays and will continue to play a crucial role in absorbing the abundance of unskilled labour that is part of the apartheid legacy (Lewis, 2002; Maritz, 2012; National Planning Commission, 2011; Papi & Wu, 2016). It is against this backdrop that intrapreneurship in the form of innovation, risk taking, competitiveness and strategic renewal becomes a viable company strategy to, firstly, mitigate the effects of climate change, secondly, to diversify products and thirdly, to reduce processing costs to become internationally competitive. This study focused on evaluating the extent of intrapreneurship in a sugar producing company operating in KwaZulu-Natal using its various operating centres to identify strategies that could be deployed to enhance intrapreneurial behaviour.

style and management support were perceived as barriers. Recommendations to the firm include enhancing recognition and rewards programmes, fostering team work, cross functional communication, tapping into the talent and vision of the youth, establishing an innovation board, benchmarking through employee exchange programmes and finally, implementing training and development around entrepreneurial leadership.

Subjects: Business, Management and Accounting; Production, Operations & Information Management; Leadership; Entrepreneurship; Organizational Studies;

Keywords: Intrapreneurship; sugar industry; entrepreneurial leadership; South Africa

1. Introduction

Intrapreneurship is the act of “entrepreneurship” within an organisation (Antoncic 2007; Antoncic & Hisrich, 2003; Dollinger, 2008; Maier & Pop Zenovia, 2011). It is intrinsically linked to firms’ survival, growth, and profitability (Antoncic 2007; Zahra, 1996) and has become a central theme in a firm’s strategy. There is a vast and rapidly growing body of literature on intrapreneurship due to its importance to a firm’s strategy. In this publication, the term intrapreneurship is synonymous with “corporate entrepreneurship”.

Both intrapreneurship and entrepreneurship have a significant role to play within the South African context. Whilst entrepreneurship deals with the start of new businesses (Nieman & Nieuwenhuizen, 2014), intrapreneurship can be viewed as an organisational strategy to sustain them, both of which are crucial in the South African socio-economic context and within the broader theme of globalisation.

South Africa’s (SA) 2030 vision, as outlined in the National Development Plan (NDP) clearly articulates the need for the country to sharpen its innovative capacity to spur economic growth (National Planning Commission, 2011). According to the Minister of Trade and Industry Rob Davies, SA’s manufacturing sector needs to become more export competitive (Moodley, 2015) in order to reduce consumer prices, improve quality, promote economic growth and in the long run, alleviate poverty (Hall, 2016).

The importance of the sugar industry is well articulated in the NDP. According to the NDP, agriculture is one of the most labour-intensive sectors and can play an instrumental role in absorbing SA’s surplus, low skilled labour and uplifting the rural poor (National Planning Commission, 2011).

The sugar industry is organised into two broad groups: A Growers Association consisting of 13 local grower councils and the Millers Association made up of six milling companies, namely Tongaat Hulett Sugar Limited, Illovo Sugar Limited, Gledhow Sugar Company (Pty) Limited, UCL company (Pty) Limited and Umfolozi Sugar Mill (Pty) Limited and RCL Foods Sugar & Milling (Pty) Limited. Both the Growers and Millers Associations are affiliated to the SASA council that regulates and oversees industry matters (SASA, 2016).

In recent years, the sugar industry has been exposed to some serious challenges, threatening many company’s competitiveness and long-term sustainability. These challenges include climate change, intensifying periods of drought, negative consumer perceptions of sugar’s impact on health, urbanisation and cheap imports from abroad and a sugar tax that was recently introduced (Insight Survey, B2B Market Research, 2015). Surmounting these challenges is vital as the broader sugar industry plays and will continue to play a crucial role in absorbing the abundance of unskilled labour that is part of the apartheid legacy (Lewis, 2002; Maritz, 2012; National Planning Commission, 2011; Papi & Wu, 2016).

Despite external threats facing the sugar industry, there are emerging opportunities, which include the green economy in the form of cogeneration and biofuels and social enhancement as described in the country's NDP. These external threats and opportunities provide the perfect platform from which to pursue an intrapreneurship strategy, specifically the drive towards "strategic self-renewal" both at industry and company level. Failure to do so, will move the industry from its current "mature phase" towards a "decline phase" which is not in the best interests of the various stakeholders. It is against this background that strategic renewal, business development, revenue growth and enhanced profitability via a deliberate "intrapreneurship strategy" becomes a viable option for sustained competitive advantage (Lotz & Van der Merwe, 2013).

Local intrapreneurship studies have been industry specific providing useful and practical insights (Enslin, 2010; Gcaza, 2013; Letsie, 2013; Oosthuizen, 2006; Oosthuizen & Van der Merwe, 2009). This study focused specifically on evaluating the extent of intrapreneurship in a sugar producing company operating in KwaZulu-Natal using its various operating centres to identify strategies that could be deployed to enhance intrapreneurial behaviour.

The purpose of the study was to identify those elements within the firm environment that are shaping intrapreneurial behaviour as well as employee specific elements, thus allowing practical implementation of strategies that will lead to long term competitiveness and sustainability within such a turbulent macro environment.

The scope of the study included a broad assessment of the firms "intrapreneurial climate", identifying its strengths and weaknesses, followed by an employee perception survey on organisational barriers inhibiting intrapreneurial behaviour and recommendations seen through the lens of the broader organisation. Finally, the correlation between leadership style, employee entrepreneurial orientation and organisational culture was explored.

The specific research objectives were:

- To determine the overall intrapreneurial climate of the company and its strengths and weaknesses.
- To determine barriers preventing intrapreneurship as perceived by company's managers.
- To determine the strategies that can be employed to enhance intrapreneurial behaviour amongst the managers of company.
- To assess the correlation, if any, between the firm's variables of entrepreneurial orientation, organisational culture and leadership style.

This study is anchored in a pragmatic worldview within a mixed methods design, drawing upon both qualitative and quantitative techniques, to benefit various stakeholders, namely the firm in review, human resource practitioners and business leaders alike, who are seeking insight into behavioural and environmental factors that shape intrapreneurship within their firms. The study was limited to junior, middle, senior and executive management and the sample group was determined based on a 95% level of confidence with a 5% margin of error. This ensured that the study was practical and achievable within the required time frame.

This study is unique in that, it is the first intrapreneurial study conducted in the sugar industry in South Africa, and will thus make a meaningful contribution to the growing body of intrapreneurial literature coupled with the practical insights into strategies that can assist the firm and industry navigate these turbulent times.

2. Literature review

The term "intrapreneurship" was first coined by Pinchot in 1987 to describe the process of innovation in firms that led to their growth. Intrapreneurship has been defined as the act of "entrepreneurship"

within an organisation (Antoncic 2007; Antoncic & Hisrich, 2003; Dollinger, 2008; Maier & Pop Zenovia, 2011) and is synonymous with the term “Corporate Entrepreneurship” (Burgelman, 1983). Thornberry (2001, p. 527) offers a more evocative definition of intrapreneurship as “start-up entrepreneurship turned inward”, which is the application of entrepreneurial spirit within the confines of the firm. Stevenson and Jarillo (1990, p. 23) define it as “a process by which individuals inside organisations pursue opportunities independent of the resources they currently control”, signifying an element of resilience, rebellion and creativity in achieving goals. Some authors have employed stricter definitions that indicate new venture formation (Kanter & Richardson, 1991) whilst Baran and Velickaite (2008, p. 23) cite Kirby’s definition as a peculiar mix of skills that merges the ‘attributes of entrepreneurs with that of corporate managers.

North (2015, p. 13) notes, that, from a contextual perspective, “intrapreneurship occurs with the boundaries of an existing firm”, whilst entrepreneurs create their own. Intrapreneurs may not necessarily benefit from their efforts, as is explicit with entrepreneurs; however, this differentiator is blurred if the intrapreneur gains ownership of the firm via stock options.

According to Morris et al. (2011, p. 35), the similarities between intrapreneurship and entrepreneurship include “opportunity identification, an innovative process, team work driven by dedicated innovation champions, high levels of ambiguity and a balance between managerial pragmatism and vision”. Whilst similarities abound, the key distinguishing factor is the central issue of ownership and the extent and allocation of risk.

The major differences between intrapreneurship and entrepreneurship include the bearer of risk, ownership of intellectual rights and the reward potential (Morris et al., 2011). Intrapreneurs’ risk is limited to their career progression and rewards, with the company bearing the risk of the venture. On the other hand, entrepreneurs bear the full risk and accept full reward for the new venture. An intrapreneur’s reward is limited and governed by the firm’s policy on incentives and rewards.

Intrapreneurship is closely linked to a firm’s strategy, culture, long-term performance and sustainability (Kassa & Raju, 2014; Kuratko et al., 2014). From a trait’s perspective, perseverance, tolerance for ambiguity, extraversion, openness, intelligence, emotional intelligence, planning capability and leadership skills are considered very important (North, 2015; Patterson et al., 2009; Rhee & White, 2007).

Entrepreneurial orientation deals with processes, behaviours, and decision-making activities and includes autonomy, innovativeness, pro-activeness, competitive aggressiveness, risk-taking, new business venturing, new product, process and service innovation and strategic self-renewal (Antoncic & Hisrich, 2003, p. 19; Dess & Lumpkin, 2005). These dimensions are greatly influenced by the crucial role of “entrepreneurial leadership” in fostering a climate and culture of intrapreneurship (Kuratko, 2007; Simsek et al., 2015).

Factors affecting intrapreneurship can be classified into the nature of the individual, the nature of the firm in terms of management practices, culture, leadership, policy, and structure and finally the external environment in terms of competition, industry life cycle and technological ubiquity. Scholars have identified corporate bureaucracy, internal resistance to change, lack of involvement of venture capitalists, inappropriate compensation, corporate rigidity, functional blindness, corrosive politics and poor strategic articulation as common explicit barriers (Dollinger, 2008; Lukes, 2012). Dollinger (2008) arranges “organisational barriers” to intrapreneurship along the lines of corporate bureaucracy, internal resistance to change, lack of venture capitalist involvement, inappropriate compensation and the rigidity of the corporation.

Within the South African context, both entrepreneurship and intrapreneurship are growing in importance in addressing the country’s socio-economic challenges largely by enhancing economic growth through competitiveness and innovation (Hall, 2016; National Planning Commission, 2011; Nieman & Nieuwenhuizen, 2014).

3. Methodology

This study is embedded in a pragmatic worldview, with the intention of uncovering practical insights into the nature of the firm, specifically its strengths and weaknesses and soliciting managers' perceptions of strategies and practical countermeasures that will improve the firm's intrapreneurial culture. To achieve these objectives, a mixed method approach was adopted, which combines the results obtained using both quantitative and qualitative inquiries. The quantitative data was generated using a survey design. Embedded in the survey, an open-ended question soliciting employees' perceptions of barriers and constraints hindering intrapreneurship in the firm was used to gather qualitative data, which was subsequently coded into common themes and analysed using quantitative methods in order to rank emerging themes from high to low.

The study was conducted in the firm's South African operations in KwaZulu-Natal, and covered both operating centres (Table 1) and support services. The scope was deliberately limited to junior, middle, and senior/executive management to keep the research project within its stipulated timeframe and practical limits.

The population under study included all managers from the company's South African operations division. The sampling frame was produced by contacting each operating centre and generating a list of managers. The individual lists were then collated into the sampling frame which consisted of 142 managers. This study adopted simple random probability sampling to contain costs and save time whilst still capturing a significant proportion of key decision makers and influencers in the organisation. The target confidence level and margin of error was 95% and 5%, respectively. The target sample size was determined using the following equation (Kothari, 2004):

$$S = \frac{X^2 N P (1 - P)}{e^2 (N - 1) + X^2 P (1 - P)}$$

Where:

S - Sample size required

X - Confidence level (CL), or Z value = 1.96 for a 95% CL

N - Population size

P - Population proportion, assumed at 0.5

e - Margin of error, assumed at 5%

Using this equation, the minimum sample required, using 142 managers as the population was determined as 104. To cater for questionnaire errors and lack of participation, it was decided that all managers would be e-mailed, requesting participation. A total of 110 usable questionnaires

Table 1. Operating centres included in the study

Operating Centre	
1	Marketing, sales and distribution
2	Refinery
3	Technology development
4	Strategic sourcing & buying
5	Milling units
6	Animal feeds operation

were received over a five-week period, thus achieving a confidence level of 95% and a margin of error of 5%.

This study adopted a survey approach using a questionnaire for data collection. A key point of consideration in the selection of a questionnaire is its ability to yield data that is valid, reliable and practical in its application (Kothari, 2004). In this regard, a structured process was adopted to identify the most appropriate instrument. This included a review of the relevant literature, identifying relevant questionnaires, and assessing them against specific qualifying criteria.

Four different intrapreneurship questionnaires were examined and a selection was made based on specific qualifying criteria. Table 2 shows the four instruments and their originating authors.

Based on the criteria of practicality i.e. economy, interpretability, convenience, and the validity and reliability of results from previous studies, the instrument developed by the author, Hill was selected for the purpose of this study.

This study used a self-administered questionnaire that was distributed both electronically and through physical printed copies for those that requested such. To finalise the questionnaire, a pilot study was conducted with carefully selected managers. Prior to emailing the questionnaire, each operating centre authority, i.e., the General Manager was contacted and the background and purpose of the study were explained as per the details contained in the informed consent form. The questionnaire was then e-mailed to the participants along with the informed consent form. Informed consent was embedded in the e-mail, covering *inter alia*, the title of the research project, the affiliated university, the nature of the study, its objectives, the voluntary nature of participation and the pledge of participant anonymity. The survey was administered in hard copy format and in e-mail form.

This study employed the internal consistency check by using the Cronbach's alpha for the various constructs measured in the "climate survey". All the items exceeded the minimum 0.70 guideline for good internal consistency (Bonett & Wright, 2015) and were thus deemed satisfactory in terms of reliability.

An official gatekeeper's letter was obtained from the company's authority and ethical clearance was obtained. All the study participants were briefed via the informed consent letter on the purpose and objectives of the research and were given sufficient time, i.e., five weeks to complete the questionnaire.

External validity of this study was achieved via the probability sampling plan which achieved a 95% confidence level with a 5% margin of error. The questionnaire was then subjected to both a content validity test and construct validity viz., convergent and discriminant techniques.

Table 2. List of intrapreneurship instruments reviewed during the study

No.	Authors	Instrument name
1	Goosen et al. (2002)	Factor based instruments to measure corporate entrepreneurship
2	Hill (2003)	Intrapreneurship measurement in corporate settings
3	Oosthuizen (2006)	Entrepreneurial Climate questionnaire
4	Kuratko et al. (2014)	Diagnosing a firm's internal environment for corporate entrepreneurship

Content validity was achieved through a judgemental process involving the literature review and evaluation of other similar instruments. The questionnaire was found to be comprehensive in both coverage and depth.

Microsoft Excel was used for data capturing and analysis. The statistical tool-pack was uploaded and used to calculate the descriptive statistics for the various constructs measured. The scales used in sections B and C of the questionnaire were all interval data, thus enabling the use of the mean as a measure of central tendency and dispersion via the standard deviation (Blumberg et al., 2005). Microsoft Excel was also used to conduct the reliability tests and various statistical analyses, namely, the Cronbach alpha coefficients, Anova and correlations. Inferential statistical techniques in the form of regression were employed to test the relationship between key variables of leadership, culture and employee orientation and the Karl-Pearson's coefficient of correlation (r) and coefficient of determination (r^2) was computed and tested for significance to establish meaningful relationships. The qualitative question was analysed and then grouped into key themes. Frequency tests were conducted and summarised into key emerging themes and recommendations for the firm's consideration.

4. Results and discussion

The Cronbach alpha, which is a measure of internal item consistency, was used to test the reliability of each construct (Tavakol & Dennick, 2011). Section B of the questionnaire assessed the internal intrapreneurial climate and consisted of six sub-constructs of (1) the nature of the firm's activities, (2) employee entrepreneurial orientation, (3) organisational structure and flexibility, (4) policies and systems, (5) leadership style, and (6) the organisational culture. The results for each sub-construct's mean, variance, standard deviation and Cronbach alpha are given in Table 3.

The minimum Cronbach alpha is 0.72, as measured for the firm's "policies and systems", and the maximum alpha is 0.93 in terms of "culture". Hence, section B of the survey i.e. "the intrapreneurial climate survey" is deemed reliable using the Cronbach alpha as the reliability criterion.

This study addressed employees' perceptions in terms of (1) barriers and constraints to intrapreneurship, and (2) interventions required to enhance intrapreneurial behaviour at an individual level. The barriers and constraints consisted of six items that were rated using a four-point, forced likert scale, whilst the employee interventions consisted of four items, using the same scale. The results for each item's mean, standard deviation and Cronbach alpha are given in Tables 4 and 5.

Table 3. Cronbach alpha for the Intrapreneurial climate survey

Sub-construct n = 110		Mean	Standard Deviation (S.D)	Cronbach Alpha α
1	Firm's activities	29.88	6.72	0.87
2	Employee entrepreneurial orientation	41.08	4.01	0.77
3	Organizational structure and flexibility	27.01	6.00	0.79
4	Policies and systems	27.55	4.10	0.72
5	Leadership style	30.85	5.44	0.90
6	Culture	29.84	7.24	0.93

Table 4. Cronbach alpha for “barriers and constraints”

Barriers and Constraints n = 110		Mean	Standard deviation (S.D)	Cronbach alpha α
1	Capital availability	3.23	0.96	0.85
2	Leadership style and management support	2.59	0.89	
3	Red tape and bureaucracy	2.86	0.91	
4	Job role and structure clarity	2.35	0.97	
5	Resource availability—time, skills, knowledge	2.86	0.97	
6	A well-structured process to innovate	2.84	0.94	

Table 5. Cronbach alpha for “intervention requirements”

Employee intervention required n = 110		Mean	Standard deviation (S.D)	Cronbach alpha α
1	Training and development	2.33	0.88	0.88
2	Coaching and mentoring	2.44	0.97	
3	Resource availability	3.24	0.79	
4	Discretionary time to pursue projects	2.83	0.90	

The Cronbach alphas for both “barriers and constraints” and the “employee intervention required” yielded high alphas of 0.85 and 0.88, respectively, confirming the reliability of the questionnaire.

The strengths and weakness of the firm were determined using questionnaire that measured intrapreneurial intensity across six key dimensions. The relative strengths and weaknesses were gauged using the scales developed by Hill (2003). This scale uses the mean value for each dimension and compares it to the calibrated scores given in Figure 1. Each question per dimension is scored on a 1 to 5 likert scale with 5 signifying high intrapreneurial intensity and 1 signifying extremely low intrapreneurial intensity.

Using the scale and mean values, the six dimensions are categorised into high and low intrapreneurial intensities and are given below in Figure 2.

Based on the classification of intrapreneurial intensity using the scale developed by Hill (2003), the firm exhibits low intrapreneurial intensity along the following dimensions:

- Leadership
- The nature of the firm’s activities
- Organisational culture
- Policies and systems
- Organisational structure and flexibility

Figure 1. Intrapreneurial intensity score guideline.

(Source: Adapted from Hill, 2003).

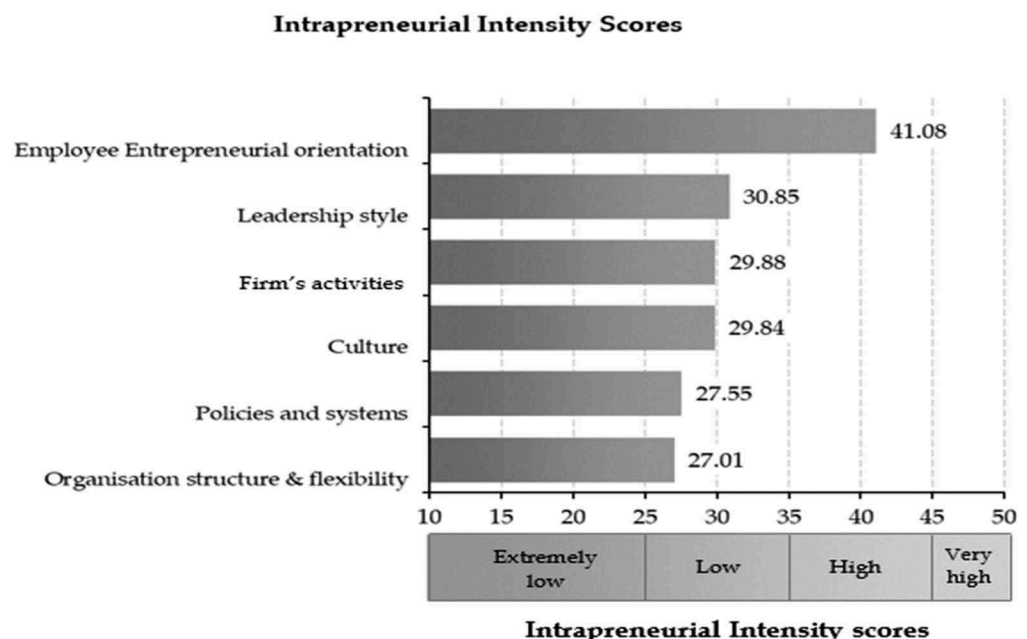
MEAN VALUE	INTRAPRENEURIAL INTENSITY			
	Extremely low	Low	High	Extremely high
	10 - 25	26 - 35	36 - 45	46 - 50

The firm scored high on “employee entrepreneurial orientation” which indicates that it has sufficient intrapreneurial capability and motivation amongst its managers. However, it appears that this strength is suppressed by the other intrapreneurial dimensions. This finding is contrary to Bayarcelika and Ozsahinb (2014) argument that, “organisational climate, entrepreneurial orientation and organisation culture” are mutually reinforcing. In this case, high entrepreneurial orientation does not translate to higher intrapreneurial intensity in culture and climate.

The overall intrapreneurial climate, measured at 31.04 is also deemed low and is consistent with findings in the literature on “antecedents” to intrapreneurship, i.e., the quality of leadership (Agbor, 2008; Muenjohn & McMurray, 2016), rewards and reinforcements (Kuratko et al., 2014) and organisational structure (Jones & George, 2014; Mcbeth & Rimal, 2004), have a positive relationship with intrapreneurial climate. A further plausible reason for a low intrapreneurial climate is the “hostile” environment the firm is currently experiencing in the form of imported sugar, the impending sugar tax and climate change (National Treasury, 2016; Shabalala, 2014; Van Zyl, 2016). A hostile environment is known to suppress intrapreneurship (Rosenbusch et al., 2013).

The barriers to intrapreneurship were established using the questionnaire which specifically solicited managers’ perceptions of “barriers and constraints” as identified in the literature. These included (1) capital availability, (2) leadership style and management support, (3) red tape and

Figure 2. Histogram of Intrapreneurial intensity scores.



bureaucracy, (4) job role and structure clarity, and (5) resource availability in terms of time, skills and knowledge. Each dimension was scored on a four-point rating scale with the median (2.5) serving as the measure of high or low constraint. The ratings scoring guidelines as determined by the author are given in Figure 3.

The analysis of perceived barriers and constraints reveals that capital availability is the number one barrier, followed by red tape and bureaucracy, resource availability, a well-structured process, leadership style and management support. Job role and structure clarity is the only aspect that is perceived as a low constraint, falling below the median. The majority of the items are thus perceived as barriers and this is consistent with the low intrapreneurial climate found under objective one. These barriers are similar in nature to those discussed by Dollinger (2008), Lukes (2012), and Mohanty (2006) although the ranking is different.

The extent of capital availability could reflect the current cash flow of the business and is considered serious given that capital is a key enabler in all aspects of the effective operation of a business. The barriers of “red tape and bureaucracy, resource availability and a well-structured process” all scored in the region of 2.84 to 2.86, indicating a need for the firm to increase its agility

Figure 3. Barriers and constraints perception score guideline.

<i>MEAN VALUE</i>	← <i>PERCEIVED CONSTRAINT</i> →			
	Extremely low	Low	High	Extremely high
	1.0 - 1.74	1.75 - 2.49	2.50 - 3.24	3.25 – 4.0

Figure 4. Histogram of Perceived barriers and constraints.

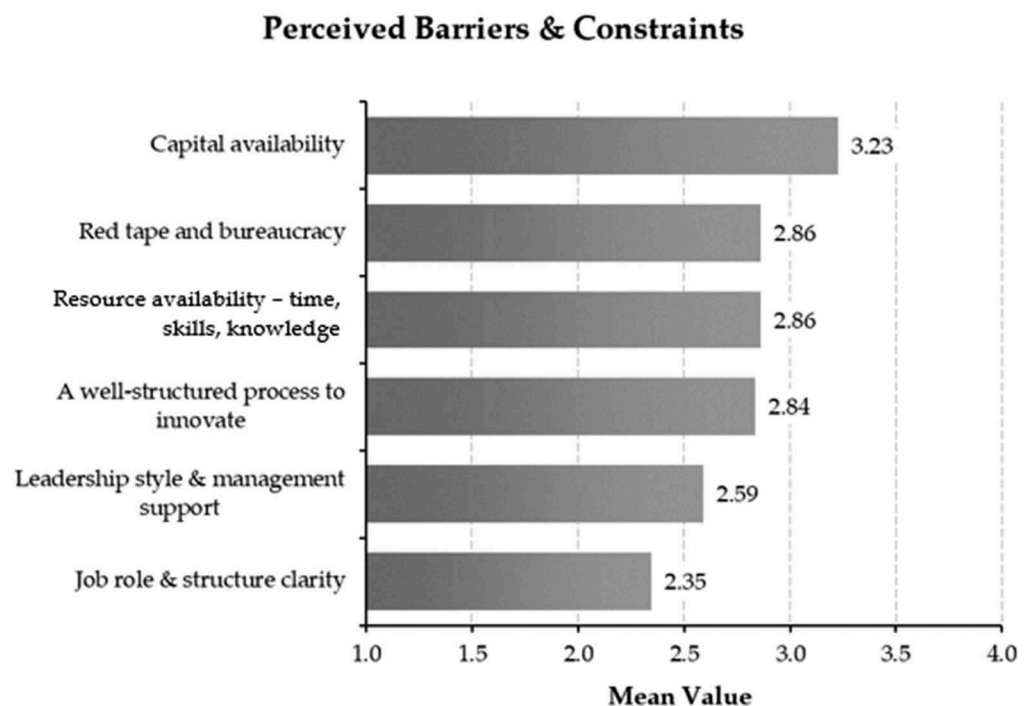


Figure 5. Scatter plot of Leadership style vs. organisational culture.



and flexibility whilst providing managers with sufficient discretionary time to undertake innovative initiatives.

Regarding managers' recommendations on practical strategies that could be used to raise levels of intrapreneurship in the firm, the set criteria derived from the literature included 1) training and development, 2) coaching and mentoring, 3) resource availability, and 4) discretionary time. Each criterion was scored on a four-point rating scale to gauge its importance and the mean scores were used as ranking criteria. The results of this exercise can be found in Table 7. In addition, an open-ended question was posed probing participants on their views and opinions on how to enhance the firm's entrepreneurial culture. The recommendations were qualitative in nature, and were subsequently coded into common themes and a frequency analysis was conducted. The recurring themes included (1) vision and strategic intent, (2) employee management, (3) management approach and style, (4) organisational systems, structures and policies, and (5) customer and market orientation. Under each theme, sub-themes were identified and ranked in frequency. A total of 179 recommendations were classified in this manner and the top three per theme were identified.

Based on the set criteria for enabling an intrapreneurship strategy (Table 6), the most highly rated recommendation is to ensure sufficient resource availability in the form of capital and labour, followed by giving employee's discretionary time, coaching and mentoring and training and development. In terms of the open-ended question that solicited recommendations, the most frequently emerging theme was the need to enhance the management approach, followed by streamlining organisational systems and policies, engaging constructively with employees, providing a vision coupled with strategic intent and finally, adopting a market and customer orientation.

Table 6. Ranking of recommended intrapreneurial strategies

Recommended Intrapreneurial Strategies n = 110		Mean
1	Resource availability	3.24
2	Given discretionary time to pursue projects	2.83
3	Coaching and mentoring	2.44
4	Training and development	2.33

Under the broad theme of “management approach”, the top five recurring sub-themes were (1) commitment from management, (2) investment in training and development in terms of innovation, (3) tolerating mistakes as a process of learning and growth, (4) encouraging employees to think and act differently from the status quo, and (5) improved communication. These themes resonate with studies by Kuratko et al. (2014), Wang (2008) and Peter Drucker (Drucker, 2014) who argued that listening to employees is a key strategic enabler of intrapreneurship.

Under the broad theme of “organisational systems, policies and structures”, the top three recurring sub-themes were (1) enhancing the rewards system to match employee performance and output, (2) removing red tape and bureaucracy, and (3) improving mechanisms for knowledge sharing and organisational learning to facilitate succession planning. These findings are similar in nature to those of Kuratko et al. (2014) who points out that recognition must be coupled with rewards to motivate intrapreneurs. Likewise, Thornberry (2001) highlights the importance of knowledge sharing in enabling intrapreneurship, specifically the process of competitiveness and innovation. Removal of “red tape” is consistent with the findings under “barriers and constraints” which identified excessive bureaucracy as the second most frequently perceived barrier.

Under the theme of “employee management”, three recurring sub-themes are apparent: (1) matching the employee and the task for optimal fit, (2) empowering employees to make decisions and take ownership of their areas, and (3) tapping into “generations X and Y”. The growing presence of generations X and Y in the workplace and its implications from a motivational perspective is a key point noted for further research. “Employee empowerment” is a common intrapreneurial theme in the literature and is associated with acts of autonomy, resource availability and discretionary time (Bayarcelika & Ozsahinb, 2014; Kuratko et al., 2014).

Under the theme of “vision and strategic intent”, the top three recurring sub-themes were (1) the need for an innovation vision coupled with executive management commitment, (2) the need for bold leadership that is both transformational and charismatic, and (3) the need for the firm to develop strategic awareness, both internally and externally. The need for an innovation vision, commitment and strategic awareness is well articulated by Ireland et al. (2009), Kuratko et al. (2014), and Oosthuizen and Griffin (2016), further emphasising the link between this component of strategic management and intrapreneurship. Likewise, transformational leadership in the firm is highlighted by Renko et al. (2015) who stresses the need for leadership that enhances creativity and forges strategic renewal.

The regression plot of the two variables of “leadership style and organisational culture” is given in Figure 6 with leadership style being the independent variable and organisational culture the dependant variable.

The results of the student t-test, co-efficient of correlation and co-efficient of determination for the variables of leadership style and organisational culture are given in Table 7.

Figure 6. Scatter diagram of Leadership style vs. employee entrepreneurial orientation.

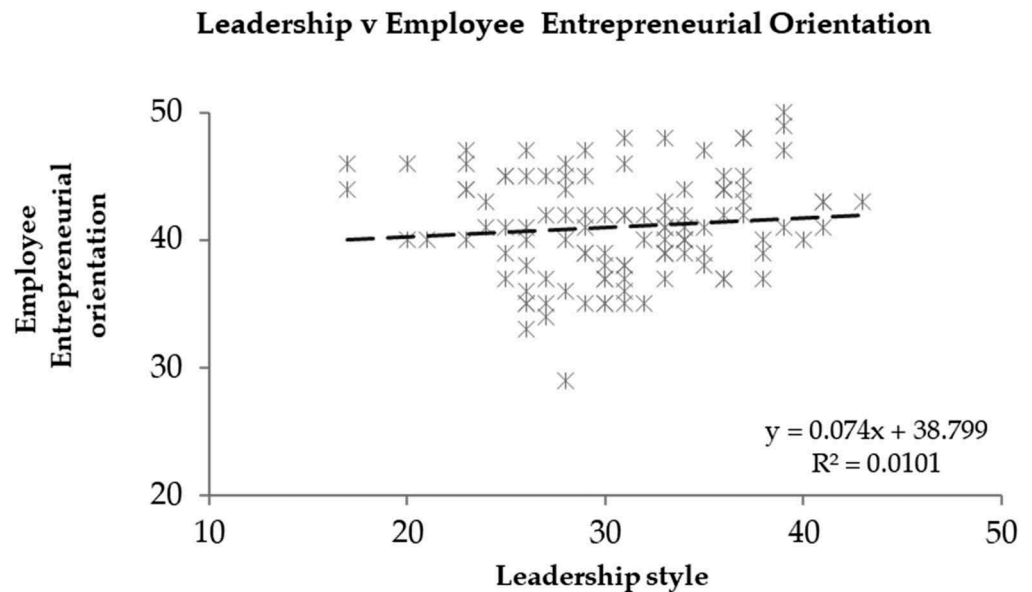


Table 7. Student t-test of Leadership style vs. culture

Description	Notation	Result
Significance level	α	5%
Degree of freedom	ν	108
Student t-test critical value	$t_{critical}$	+1.984 and -1.984
Student t-test output	t_{calc}	9.45
p-value	p	8.42×10^{-16}
Null Hypothesis	H_0	Reject the Null

Figure 6 shows the regression plot of “leadership style and employee entrepreneurial orientation”, with leadership style being the independent variable.

The results of the student t-test, co-efficient of correlation and co-efficient of determination for the variables of leadership style and employee EO are given in Table 8.

Figure 7 presents the regression plot of “organisational culture and employee entrepreneurial orientation”, with organisational culture being the independent variable.

The results of the student t-test, co-efficient of correlation and co-efficient of determination for the variables of organisational culture and employee entrepreneurial orientation are given in Table 9.

Based on the regression analysis of leadership style and organisational culture, the co-efficient of correlation was determined to be 0.673 and the student t-test confirms that the relationship between the two variables is significant. Therefore, leadership style is strongly correlated with organisational culture. This corroborates Koryak et al.’s (2015) argument that leaders have a strong “imprinting effect” on ventures and the subsequent culture of the firm. This finding is thus consistent with scholarly views that leadership style is crucial in shaping organisational culture (Fayolle et al., 2010). Furthermore, empirical studies suggest that leadership style can contribute anywhere between 20%

Table 8. Student t-test results for Leadership style vs. employee entrepreneurial orientation

Description	Notation	Result
Significance level	α	5%
Degree of freedom	ν	108
Student t-test critical value	$t_{critical}$	+1.984 and -1.984
Student t-test output	t_{calc}	1.05
P-value	p	0.293
Null Hypothesis	H_0	Accept the Null

Figure 7. Scatter diagram of organisational culture vs. employee entrepreneurial orientation.



Table 9. Student t-test results for culture vs. employee EO

Description	Notation	Result
Significance level	α	5%
Degree of freedom	ν	108
Student t-test critical value	$t_{critical}$	+1.984 and -1.984
Student t-test output	t_{calc}	1.05
P-value	p	0.621
Null Hypothesis	H_0	Accept the Null

and 60% of the creativity climate of a firm (Horth & Vehar, 2015). Hence, enhancing the leadership style in the firm could drastically enhance its entrepreneurial culture.

Based on the regression analysis of leadership style and employee orientation, the co-efficient of correlation was determined to be very low at 0.10 and the student t-test confirms an “insignificant relationship” between the variables. This finding suggests that leadership style is not affecting the entrepreneurial behaviour of the managers in the firm, which is contrary to expectations. According to the literature, a firm’s leadership style has a huge impact on employee performance and behaviour (Agbor, 2008; Horth & Vehar, 2015; Muenjohn &

McMurray, 2016; Renko et al., 2015). Again, the participant bias inherent in the self-measurement of “employee entrepreneurial orientation” in the survey instrument is one reason for this discrepancy.

The regression study of “organisational culture and employee entrepreneurial orientation” reveals a low co-efficient of correlation of 0.05. The student t-test further confirms an insignificant relationship between the variables. This is contrary to the literature that validates “entrepreneurial orientation” as a product of organisational culture (Bayarcelika & Ozsahinb, 2014).

5. Conclusion and recommendations

Intrapreneurship is the act of innovation, competitiveness and risk taking within large corporate firms that find themselves in increasingly turbulent, uncertain and ambiguous environments. Such complexity is apparent in the sugar industry where firms confront numerous challenges in the form of climate change, cheap imported sugar, sustainability pressures, urbanisation and a sugar tax that threatens profitability. It is against this backdrop, that this study of intrapreneurship was undertaken with a view to identifying its overall intrapreneurial climate, its specific strengths and weaknesses, barriers and constraints as perceived by managers and potential interventions to enhance its intrapreneurial culture.

The results for objective one confirmed the low intrapreneurial climate of the firm, with leadership, structure, culture and its core activities as key weaknesses whilst its strength is the high levels of entrepreneurial orientation of its managers. The findings in relation to objective two identified the barriers and constraints as “capital availability, bureaucracy, resource availability, a poorly understood innovation process, leadership style and management support”. Under objective three, practical interventions identified that would enhance the firm’s intrapreneurial culture included “resource availability, discretionary time, coaching, mentoring, training and development, employee empowerment and enhanced management approach”. Finally, in relation to objective four, the results showed that there is a significant correlation between the “leadership style and organisational culture”, whilst the correlation between “leadership style and employee orientation” and “employee orientation and culture” was found to be insignificant.

The firm’s overall climate was determined to be low in intrapreneurial intensity with its key strength being the high levels of entrepreneurial orientation of its junior, middle, senior and executive managers. Its weaknesses revolve around its organisational structure, policies and systems, culture, and leadership and the very nature of its core business activities.

The number one perceived barrier was “capital availability” followed by “red tape and bureaucracy, resource availability, a well-structured innovation process, leadership style and management support”. “Job role structure and clarity” was perceived as a low barrier.

Against the set criteria in the questionnaire, managers recommended “resource availability” as a key intervention followed by “discretionary time, coaching and mentoring” and “training and development” around the innovation process. The relationship between leadership style and culture was positively correlated and found to be significant. The relationships of “leadership style and employee orientation” and “employee orientation and culture” were found to be insignificant with a low co-efficient of correlation, going against expectations and the findings in the literature. This contrary finding may be linked to the inherent bias of the survey instrument as employees are likely to over evaluate their intrapreneurial capabilities.

This research study contributes to the growing body of intrapreneurship literature and is unique to the sugar industry. It substantiated the existing literature whilst providing deep insight into the nature of company and the broader sugar industry in which it operates. Most importantly, the study yielded practical understanding and information that could be used by the firm to guide its policy making and shape its innovation strategy.

It is evident from the recommendations emerging from the survey that recognition and rewards play a significant role in motivating intrapreneurs by creating a climate conducive to intrapreneurship. The firm could enhance its existing programmes as well as establish a dedicated forum in which to recognise, praise and reward intrapreneurial behaviour, ventures and projects. This would enhance transparency and allow leadership to actively demonstrate its commitment to employees, innovation and creativity, thus enhancing trust and employee loyalty. Furthermore, the firm's rewards system should be realigned to ensure a systematic approach to rewarding effort and results in line with the nature and extent of the innovation initiative.

The firm should consider strengthening team-based work that is both cross functional and localised to foster sharing of ideas, skills, knowledge and motivation. Rewards should place emphasis on teamwork and team performance, not just individual performance, to embed the desired behavioural change amongst employees.

As a means of accelerating learning and the experience of its younger employees, the firm can consider coupling the retiring generation of "Baby Boomers" with the incoming "Millennial generation", to ensure knowledge transfer, and encourage a culture of mentoring and coaching. Knowledge transfer is a crucial component in sustaining intrapreneurship, which is built on attitude, collaboration and knowledge. As such, the firm will be coupling the wisdom of the "Baby Boomers" with the passion, creativity and energy of the "Millennial generation".

An "innovation board" could be formed comprised of a healthy mix of intrapreneurial employees with the vision, passion and drive to realise intrapreneurial strategies across the firm. The board should be autonomous and have both the authority and power to initiate innovation transformation across the firm. Amongst the many functions of the innovation board would be a human resources strategy to assess the "intrapreneurial potential" of incoming employees, thus ensuring that intrapreneurship is factored in all the way to the recruitment stage.

In conjunction with an innovation board of directors, innovation across the firm could be embedded in the "key performance areas" of all managers, thus raising awareness of the importance and strategic function of innovation. This would enhance accountability amongst managers and innovation could be driven through their performance contracts.

The study, which is specific to a single firm, is limited in its ability to generalise across the sugar industry given the variability in culture, management style and strategies employed by companies. Furthermore, in correlating, individual traits, the narrow scope of age, education and field of work may not necessarily provide the full scope of understanding as depicted in the literature. Other elements such as cultural heritage and personality traits were not considered in this study due to the complexity of measuring such variables and was thus deemed, beyond the scope of this study.

Future studies can include a longitudinal study to validate the impact of training and development on employee entrepreneurial orientation and an industry wide study to determine macro levels strategies that can be employed to strengthen and sustain this critical industry.

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