PART IV

RESEARCH SYNTHESIS AND
RECOMMENDATIONS
Chapter 9: Conclusions, recommendations, limitations and future research

9.1 General findings

The main general findings from the literature review are:

➢ Corporate entrepreneurship is important for DFIs because it can enhance their entrepreneurial thinking and acting, or performance, and consequently place them in a position to play the role of ‘super entrepreneur’ or catalyst for development.

➢ There are distinctive entrepreneurial characteristics that should be targeted to foster CE. These are: risk-taking propensity; desire for autonomy; need for achievement; goal orientation; and locus of control. The identification of these characteristics serves the following purposes: coaching, training and development can be targeted; and mismatches between individual motives and organisational needs can be avoided.

➢ Entrepreneurial abilities can be directly developed by education, training, and experience.

➢ An interrelationship exists between the individual and the organisational context in which entrepreneurial activity occurs. However, due attention should be given to the activities of the entrepreneur, rather than placing undue emphasis on the traits of the entrepreneur.

➢ There is a presence of innovation as a common corporate entrepreneurship dimension among all firms that can be reasonably described as entrepreneurial.

➢ The outcome of a combination of the identified organisational entrepreneurship variables and the individual factors is the organisational
entrepreneurship intensity, which in turn results in enhanced organisational performance.

The main general findings from the innovation and corporate entrepreneurship instrument development and validity testing are:

- The applied ICEAI instrument is reliable and valid, after: the removal of some questions that were regarded as superfluous and irrelevant to the South African context generally and the DFI environment in particular; the addition of innovation constructs; and further refinement of Hornsby’s (1990) CEAI instrument.

- The ICEAI instrument can be applied, in its modified and refined state, in similar research studies.

The main findings from the innovation and corporate entrepreneurship training intervention are:

- Managers and senior professionals of DFIs can be trained to think and act entrepreneurially. This is borne out by the fact that after the training of the leadership group in the experimental DFI, twenty two (22) new venture plans were developed, of which six received final approval and funding;

- Organisational leaders can be change agents for innovation and corporate entrepreneurship.

9.2 Specific findings: Pre-intervention CE assessment (O₁)

The main specific findings from the pre-intervention CE assessment (O₁) are summarised in Tables 9.2.1 to 9.2.2:
### Table 9.2.1: Summary results from the pre-intervention CE assessment 
(O₁): CE constructs

<table>
<thead>
<tr>
<th>Para.</th>
<th>$H_0$</th>
<th>There is not a significant difference regarding…</th>
<th>Between manager &amp; non-manager</th>
<th>Between male &amp; female groups</th>
<th>Between age groups</th>
<th>Between experien. groups</th>
<th>Between educat. groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5.1</td>
<td>$H_0 B_{1.1}$</td>
<td>Managerial support…</td>
<td>Accepted</td>
<td>$H_0 B_{1.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{1.3}$</td>
<td>Accepted</td>
</tr>
<tr>
<td>6.5.2</td>
<td>$H_0 B_{2.1}$</td>
<td>Work discretion</td>
<td>$H_0 B_{2.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{2.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{2.4}$</td>
</tr>
<tr>
<td>6.5.3</td>
<td>$H_0 B_{3.1}$</td>
<td>Rewards/reinforcements</td>
<td>$H_0 B_{3.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{3.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{3.4}$</td>
</tr>
<tr>
<td>6.5.4</td>
<td>$H_0 B_{4.1}$</td>
<td>Time availability</td>
<td>$H_0 B_{4.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{4.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{4.4}$</td>
</tr>
<tr>
<td>6.5.5</td>
<td>$H_0 B_{5.1}$</td>
<td>Organisational barriers</td>
<td>$H_0 B_{5.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{5.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{5.4}$</td>
</tr>
</tbody>
</table>

### Table 9.2.2: Summary results from the pre-intervention CE assessment 
(O₁): Innovation constructs

<table>
<thead>
<tr>
<th>Para.</th>
<th>$H_0$</th>
<th>There is not a significant difference regarding…</th>
<th>Between manager &amp; non-manager</th>
<th>Between male &amp; female groups</th>
<th>Between age groups</th>
<th>Between experien. groups</th>
<th>Between educat. groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5.6</td>
<td>$H_0 B_{6.1}$</td>
<td>Innovation org. support</td>
<td>$H_0 B_{6.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{6.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{6.4}$</td>
</tr>
<tr>
<td>6.5.7</td>
<td>$H_0 B_{7.1}$</td>
<td>Innovation portfolio mngmt</td>
<td>$H_0 B_{7.2}$</td>
<td>Accepted</td>
<td>$H_0 B_{7.3}$</td>
<td>Accepted</td>
<td>$H_0 B_{7.4}$</td>
</tr>
</tbody>
</table>

Tables 9.2.1 and 9.2.2 above summarise the findings of the pre-test diagnosis of employee views on corporate entrepreneurship and innovation constructs respectively. The following overview findings are noteworthy:

- On a five point Likert scale, only two constructs, the Work discretion and the Rewards/Reinforcements, were rated above average by employees. This indicates an area to focused on when planning innovation and corporate entrepreneurship training interventions;
There were five out of seven constructs where some propositions for this section were rejected. Only for the Rewards/Reinforcements and Time availability constructs were all the propositions accepted. In all the rejected propositions, *Work experience category* was a common source of such a significant difference. *Education levels category* was the other source for all but one.

For employee experience categories, ‘newer’ employees had a statistically significantly better view of the organisation on such constructs than their longer-tenure colleagues.

For employee education levels categories, the analysis indicates that employees without degrees have a statistically significant better view of the organisation on the identified constructs, except for the Work discretion construct, where the results were inconclusive. The narrative comments on the qualitative sections of the questionnaire indicate:

- frustration by higher-educated employees about poor management support and rigid organisational boundaries against the identified corporate entrepreneurship constructs; and

- poor understanding of the innovation constructs by the less educated employees.

It is concluded therefore that:

- Age is not a factor in corporate entrepreneurship but, employee tenure is. For an organisation that works in teams, this conclusion means that while veterans can have deep expertise; the newcomers bring fresh perspectives as they are not contaminated by conventional thinking.

- A different approach to innovation and corporate entrepreneurship training interventions should be researched and designed for employees who have a longer tenure in organisations such as DFIs.
Higher educated employees either find it difficult to see or think outside established patterns or management and organisational support is not suited for their ‘innovative’ ideas.

9.3 Specific findings: Pre-test- post-test- control groups (O₁,O₂,O₃) Comparisons

The main specific findings from the pre-, post-intervention, and control group comparisons are summarised in Tables 9.3.1 and 9.3.2:

**Table 9.3.1:** Summary of findings: Comparisons between pre-, post, and control groups regarding CE and innovation constructs

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Construct Name</th>
<th>Observation Group</th>
<th>F Values</th>
<th>P-Value</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₀C₁</td>
<td>Management support</td>
<td>Pre Post Control</td>
<td>11.46</td>
<td>&lt;.0001*</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₀C₂</td>
<td>Work discretion</td>
<td>Pre Post Control</td>
<td>5.16</td>
<td>0.0060*</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₀C₃</td>
<td>Rewards / Reinforcements</td>
<td>Pre Post Control</td>
<td>5.75</td>
<td>0.0034*</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₀C₄</td>
<td>Time availability</td>
<td>Pre Post Control</td>
<td>1.09</td>
<td>0.3376</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₀C₅</td>
<td>Organisational boundaries</td>
<td>Pre Post Control</td>
<td>2.49</td>
<td>0.0836</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₀C₆</td>
<td>Innovation org. support</td>
<td>Pre Post Control</td>
<td>8.53</td>
<td>0.0002*</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₀C₇</td>
<td>Innovation portfolio mngmt.</td>
<td>Pre Post Control</td>
<td>9.89</td>
<td>&lt;.0001*</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Table 9.3.1 reflects the following findings:

- That there are not significant differences between the pre-, post-intervention, and control groups’ corporate entrepreneurship opinions about **Time**
availability and Organisational boundaries. It can therefore be concluded without further analysis that the training intervention has not succeeded in influencing employee opinions on these two constructs; and that more training is recommended.

That there are significant differences between the pre-, post-intervention, and control groups’ corporate entrepreneurship opinions about the Management support for CE, Work discretion, Rewards/Reinforcements, Innovation organisational support, and innovation portfolio management constructs. The directions of such differences are summarised in Table 9.3.2.

Table 9.3.2: Summary of findings: Direction of differences between pre-, post, and control groups regarding CE and innovation constructs

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Construct Name</th>
<th>Significance test</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Post- vs. Pre-</td>
<td>Post- vs. Control</td>
</tr>
<tr>
<td>H0C1.1,2,3</td>
<td>Management support</td>
<td>+***</td>
<td>-***</td>
</tr>
<tr>
<td>H0C2.1,2,3</td>
<td>Work discretion</td>
<td>+***</td>
<td>-***</td>
</tr>
<tr>
<td>H0C3.1,2,3</td>
<td>Rewards / Reinforcements</td>
<td></td>
<td>-***</td>
</tr>
<tr>
<td>H0C4.1,2,3</td>
<td>Time availability</td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H0C5.1,2,4</td>
<td>Organisational boundaries</td>
<td></td>
<td>Accept</td>
</tr>
<tr>
<td>H0C6.1,2,3</td>
<td>Innovation org. support</td>
<td>+***</td>
<td></td>
</tr>
<tr>
<td>H0C7.1,2,3</td>
<td>Innovation portfolio mngmt.</td>
<td></td>
<td>+***</td>
</tr>
</tbody>
</table>
The acceptance of the proposition is, among other conclusions, a finding that, for the relevant construct, there is not a significant difference between post- and pre-intervention. This importantly means that the intervention has not been effective;

The rejection of the proposition is, among other conclusions, a finding that, for the relevant construct, there has been a statistically significant change in the opinions of employees regarding that construct.

Findings reflected in Table 9.3.2, read together with Table 8.2.2 in Chapter 8, indicate that the following has occurred:

- A statistically significant improvement from the pre-intervention to post-intervention state of employee opinions on innovation and corporate entrepreneurship at the experimental DFI in all but three constructs.

- Two of the constructs that do not show a statistically significant difference, ‘Rewards/Reinforcements’ and ‘Organisational boundaries’, nevertheless show an improvement, albeit not a statistically significant one, with the ‘Rewards/Reinforcements’ construct also showing an above-average mean.

- Where the intervention has not been statistically successful, opinions on innovation and corporate entrepreneurship are below average, and innovation and CE opinion levels are at similar levels in all tested DFIs. Future research to find alternative intervention mechanisms is recommended.

Where there has been a statistically significant difference (improvement) from pre- to post-groups per construct, further analysis was conducted to determine which employee categories contributed most, or did not contribute, to the improvement, and the results are shown in tables 8.2.3 to 8.2.6 in Chapter 8. Conversely, the analysis shows areas of focus in other (non-experimental) DFIs for them to be able to improve their innovation and corporate entrepreneurship climate. This also highlights remaining areas of focus for improving or sustaining similar interventions in DFIs.
The areas of focus are the *experience* and *education* employee categories, which contributed to statistically significant differences in comparisons between the observation groups regarding CE and innovation constructs. Both categories had the least average opinions on similar constructs during the pre-intervention observation, but after the intervention they both showed statistically significant improvement. This means that the intervention worked in these categories. However, there may still be significant differences among such employee categories within the same organisation, and future research is recommended to establish this.

9.4 Recommendations

It is recommended that the present study and its findings should form the basis for infusing DFIs with corporate entrepreneurship and innovation thinking and acting.

It is specifically recommended that:

- The modified innovation and corporate entrepreneurship instrument (the ICEAI) should be adopted by all African development finance institutions to diagnose their entrepreneurial climate and to identify innovation and corporate entrepreneurship training needs. The modified instrument is valid and reliable for their environments;

- An intervention similar to the one used for the experimental design of the present study should be adopted by African DFIs to foster their innovation and corporate entrepreneurial culture;

9.5 Limitations of the study

Due to time limitations, not all non-professional and support staff members of the experimental DFI were trained in innovation and corporate entrepreneurship. Therefore, the results of the present study reflect to an extent the trickle-down effect of the leadership group training on innovation and corporate
entrepreneurship. Furthermore, the number of individual responses from the control group DFIs was statistically too small to draw general conclusions about those DFIs. However, for the purposes of the design of the present study, the number of responses from the control group of DFIs was, collectively, statistically adequate to serve the study design purpose.

9.6 Future research

The results of this study provide adequate evidence in support of the sound principles of entrepreneurship documented in literature. Furthermore, the results contribute to the science and body of knowledge on corporate entrepreneurship, and establish a platform for longitudinal research on corporate entrepreneurship inside DFIs.

To take the findings of the present study forward, it is recommended that the impact of the improved entrepreneurial thinking and acting by DFIs, as observed in the experimental DFI, on poverty reduction and economic growth should be researched in future.
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