PREDICTING MANAGEMENT DEVELOPMENT BEHAVIOUR IN NEW ZEALAND SMES

Martina Battisti: Massey University, Wellington, New Zealand
David Deakins: Massey University, Wellington, New Zealand
Alan Coetzer: Edith Cowan University, Perth, Australia
Hernan Roxas: University Of South Queensland, Toowoomba, Australia

Contact: Hernan Roxas, University of South Queensland, Department of Management & Marketing, South Queensland, QLD 4350 Toowoomba, Australia, Email: banjo.roxas@usq.edu.au

Abstract

There has been a concern with raising managerial capability in SMEs by policy makers, but with little evidence on the key drivers of owner-manager participation in management development programmes. We argue that such participation is poorly understood. This paper develops a predictive model of the drivers of participation in sources of learning by owner managers. We test a theoretical model, based on the small firm as a learning organisation, that participation is driven by owner-managers’ learning orientation and the extent of their belief in self-improvement. Implications of the results are discussed in the light of the provision of management development programmes.

INTRODUCTION

It is arguable that we are still developing our understanding of the drivers of management development behaviour by owner-managers and entrepreneurs and, hence, predictors of behaviour, in SMEs, which is still recognised as a research gap (Kitching and Blackburn, 2002). Although there has been extensive work and previous research on the nature of management development, sources of learning in SMEs and barriers to participation, there has been little work on the intrinsic factors that affect participation of SME owner-managers in management development programmes and sources of learning. This paper contributes knowledge through increased understanding of the importance of intrinsic factors that influence owner-manager behaviour and levels of such participation. We provide empirical evidence on the drivers of managerial development in SMEs; develop a theoretical conceptual framework based on the SME as a learning organisation following the approach of Gibb (1997) and test two main research propositions resulting from the theoretical framework using the structural equation modelling technique. We discuss our results and propose a conceptual predictive
model for explaining factors affecting behaviour and participation in management development by owner-managers of New Zealand SMEs which can be applied more widely in other economic contexts.

The paper has been developed from a programme of research undertaken by the New Zealand Centre for SME Research (NZSMERC) on managerial capability in New Zealand SMEs. This paper reports findings from the Centre’s 2009 annual survey of 1500 SMEs, the BusinessSMEasure. The survey builds on a previous qualitative study and is part of a programme of research which has the following research questions: RQ1: to understand how SME owner-managers assess their development needs and how they meet these needs; RQ2: to assess the extent of participation in management development; RQ3: to assess the perceived impact of management development on their business

To develop the theoretical framework, we first review relevant literature, from this review we develop research propositions. After discussion of the theoretical framework, results are then presented of a predictive model which are discussed in terms of their significance. Implications are discussed and conclusions drawn for wider contexts and for policy.

LITERATURE REVIEW

Previous literature and research evidence with SME owner managers suggests a low take up of formal management development programmes and a reliance on incidental and informal managerial learning processes (Massey et al, 2005). NZSMERC’s previous qualitative study with 25 SME owner-managers (Battisti, et al, 2009), enabled the development of a conceptual framework and typology to explain orientation to learning and management development. Further it allowed the identification of variables that affected attitudes to managerial learning and participation in management development. The follow on quantitative survey of New Zealand SMEs has enabled the testing of some of the propositions from the qualitative stage, such as the importance of sources of managerial learning and the importance of variables that influence owner manager participation in management development.

Two broad themes are apparent in the literature on management development in SMEs. First, the nature of learning in SMEs by owner-managers who are perceived to have a strong preference for informal learning processes that address current business problems or issues. Most owner-manager learning is incidental, through learning embedded in everyday management practice. Second, a theme that examines SME owner-managers’ barriers to participation in structured, off-site learning and development events. There has been an underlying assumption in much of the previous research that higher levels of SME participation in external, structured and formal sources of learning are desirable, hence the bulk of research has examined the latter theme.

Nature of management development and sources of learning in SMEs Management skills are hailed as critical components of the firm’s resource base that are essential for long-term productivity and organisational success (Ministry of Economic Development, 2010). The literature suggests that improving the management knowledge and skills of SME owner-managers contributes to their survival and growth (Fuller-Love 2006). New Zealand commentators contend that there is considerable scope for further improvement in management knowledge and skills, especially in the SME sector (Ministry of Economic Development, 2010; Jayne 2007; Massey et al., 2005).

Although there is no consensus in the definition of management development (MD) in the extant literature, it is commonly viewed as one or a combination of the following: a learning process, (Mumford, 1987), management education (Thomson et al 1997); development of managerial resources (Molander 1986), a dynamic capability for learning (Espedal, 2005). The common theme amongst these perspectives is the involvement of a manager in some form of a learning approach designed to improve managerial effectiveness to meet organisational needs. Mumford (1997) classified these approaches into three groups; informal managerial accidental processes (occur within a manager’s natural working environment); integrated managerial opportunistic processes (well-defined, goal-driven, and well-planned approach within the manager’s working environment); and formalised
MD for SMEs is an issue of high importance in many developed and developing countries. Poor managerial competence is linked to small business failure (Walker et al 2007). A general finding in many studies in Australia/New Zealand, Europe and North America on MD in the context of SMEs is the low level of engagement in MD activities by the owner/managers relative to managers in large firms (Battisti et al 2009; Hoque & Bacon 2008; Gray 2004; Morrison 2003; Kitching & Blackburn, 2002). Despite the established link between participation in training programs and improved productivity, small firms have been shown to have low participation in skills development and training activities (Admiraal & Lockhorst 2009; Walker et al 2007; Battisti et al 2010).

BARRIERS TO SMEs ENGAGEMENT IN MANAGEMENT DEVELOPMENT

The low-uptake of structured management development activities (that is; formal training) in SMEs has triggered numerous studies to investigate the underlying reasons that prevent or hinder participation in such activities. Previous studies have developed different classifications of these barriers to learning and participation in MD activities. Temporal & Boydell’s (1981) work identified three major blocks to MD and learning, namely perceptual blocks (i.e. not seeing the need to learn), intellectual blocks (i.e. inadequacy of the previous learning engagement); and environmental (i.e. unsupportive organisational climate for learning). Stuart (1984) proposed that barriers to MD may be classified as intrinsic such as individual attitudes, perceptions and previous experience; extrinsic barriers, such as the larger conditions of the organisation, the industry and other extraneous variables within and outside an organisation. Mumford’s (1988) work emphasized the emotional and motivational blocks such as the lack of motivation to participate in MD as well as cognitive blocks which arise from negative reactions to previous engagement in a MD activity. These studies suggest that barriers to MD can be generally classified into two: those factors that are intrinsic to an individual as such attitudes, values, capability, and motivation to learn; and those that are extrinsic to an individual such as the nature of MD activities as well as the resources required to engage in such activities.

Constraints in resources are the commonly identified factors that prevent an owner-manager of a small firm to engage in MD activities. The financial cost of participating in MD or training programs is one of these constraints (Mitchell 2007; Walker et al 2007; Fuller-love 2006). MD is not necessarily a regular feature of the operating budget of small firms. Hence allocating resources to MD activities may be conceived as a financial burden which has no immediate financial returns and can severely impact on the small firm’s operating cash flows. Time is another resource which not many owner-managers of small firms have or are able or willing to spend on participating in MD activities (Admiraal & Lockhorst 2009; Mitchell 2007, Webster et al 2004, Walker et al 2007). The often at times hands-on involvement of owner-managers in their businesses makes engagement in formal MD activities an added burden – one that consumes precious time that could have been spent into the business.

Another set of barriers refers to the nature, the relevance and quality of MD programmes that are being promoted or marketed to small firms. Owner-managers of small firms may perceive the MD or training programmes as irrelevant to their business or individual needs (McGuire et al 2007; Mitchell 2007; Walker et al 2007). They may even think that they could not find an MD or training programme that suits their specific needs (Hoque & Bacon, 2006). Others may consider the delivery of an MD or training programme to be inconvenient as it may require significant disruption to their business operations (Walker et al 2007). Likewise, issues associated with the credibility and expertise of the provider or agent are also viewed as barriers to participation in MD (Fuller-Love 2006). The failure of the MD or training provider to demonstrate their potential to address the specific needs of participants will influence the perceptions of owner-managers of small firms to engage in MD in the future.
Other studies have focused their attention on the innate characteristics of owner-managers that may make them highly resistant to engage in MD. Owner-managers of small firms may lack the necessary management skill or aptitude to recognise the importance of MD, hence the lack of perceived need to engage in MD (McGuire et al 2007; Webster et al 2004). Closely associated to that is the lack of formal education which creates the tendency to undervalue or to inherently dislike MD or training programs especially those that take the form of formal educational programs (Fuller-Love 2006). Others are simply unaware of the MD activities that are available for them (Fuller-Love 2006). Furthermore, heavy engagement in the operational side of the business may diminish an owner-manager’s focus on strategic-level initiatives such as engagement in MD (Walker et al 2007; Webster et al 2004).

Some studies have examined organisational factors that hinder owner-managers to engage in MD. The slow technological uptake of small firms may also explain why their owner-managers tend to delay engagement in MD to develop their skills required to exploit technological innovations within the firm (Webster et al 2004). Likewise, small firms tend to have a shorter life span relative to larger firms. As a result, owner-managers of these small firms tend to focus on activities that have short-term benefits, if not immediate impact on the business (Storey and Westhead, 1997; Storey 2004). They may not be able to appreciate the long-term benefits of MD, hence the inherent dislike to engage in such activities.

The importance of understanding intrinsic barriers to MD engagement stems from the view that MD in the SME context is driven not only by organisational and external environmental forces but by the individual needs, disposition and unique characteristics of the owner-managers (Cullen & Turnbull 2005; Mabey 2008). Bishop (2008) suggests that an individual’s participation in MD activities is not a simple and objective matter of weighing up economic costs against economic returns of an MD programme. When making participation decisions, individuals seem to draw upon a range of attitudes, dispositions and orientations. An individual’s attitudes towards participation in training and more broadly, on learning, are wedded to a sense of identity and self-concept which ultimately determine their perceptions of their needs with respect to the nature and extent of participation in learning activities (Bishop 2008).

This is especially true in SMEs where the owner-manager takes the leading role in facilitating learning for the entire firm (Coetzer, 2006). Devins et al (2005) argue that success of any MD engagement depends on the strong fit between the supply side of MD interventions and that of the innate characteristics of owner-managers of small firms. Previous studies have noted the potential impact on MD engagement of intrinsic barriers such as managerial attitudes (e.g. negative or positive) (Admiraal & Lockhorst 2009; Antonacopoulou 2000; Lawless et al 2000); lack of self-esteem, insecurity and lack of confidence (Fuller-Love 2006); self-efficacy (i.e. one’s confidence on ability to cope with challenging situations) (Brown & McCracken 2009); and personal values (McGuire et al 2008). McCracken’s exploratory and qualitative study on intrinsic barriers to training participation identified the barriers as perceptual (i.e. perceived value of training), emotional (i.e. feelings of insecurity and fear of failure), motivational (i.e. desire to participate in a training program) and cognitive (i.e. thoughts of likelihood to pursue future training activities based on previous experiences).

Owner-manager attitudes towards learning and development were also seen as a common intrinsic barrier to engagement in capability development (Battisti, et al, 2009). Some managers have developed negative attitudes towards management development because of past management development experiences. Other managers hold the view that they learn incidentally through engagement in everyday work activities and that this informal work-based learning is sufficient. Some commentators argue that many SME owners/managers do not perceive themselves as managers (Fuller-Love, 2006). Consequently, the demand from SME managers for management development is not active and there is a need to stimulate demand.

A THEORETICAL FRAMEWORK
Gibb’s (1997) ‘stakeholder model’ of the nature of learning in SMEs provides a theoretical basis for propositions associated with the sources of management learning. This model suggests that SME owner-managers with an external orientation to sources of learning and engagement with external stakeholders will be more likely to engage in activities that will increase management development and capacity. A recent paper by Dragoni, et al, (2009) gives support to a theoretical basis that the degree of learning orientation of managers contributes to the extent of access to external sources of learning and to the prediction of managerial competencies (or capacity). Taking these approaches we can develop a theoretical framework of the small business as a learning organisation as shown in figure 1. This model depicts the role of the owner-manager in SMEs in relation to three sources of learning; practice-based, proximal and distal, which have been defined in the previous section.

Form this model we develop research propositions associated with the three sources of learning; practice-based, proximal and distal. The research propositions are based on internal owner-manager approaches and orientation. This is consistent with Bishop’s (2008) view on the role of attitudes and orientation on uptake of learning activities, Bishop argues that the overall stance of owner-managers towards learning and development (i.e. learning orientation) partly determines whether they seek out learning opportunities by engaging in various types of MD activities. The significance of one’s belief that he/she is capable of improving is well-entrenched in the industrial psychology literature (Dweck 2000). This belief specifically stems from an individual’s self-theory or implicit theory which refers to the belief about whether one’s personal attributes can be changed or improved. This theory suggests that higher levels of belief on self-improvement are associated with decisions to engage in continuous learning and development (Garofano & Salas 2005). Our research propositions are labelled as P1 and P2 as follows: P1: Participation in sources of learning through importance, intensity and likelihood will be determined by the owner-manager’s learning orientation. P2: Participation in sources of learning through importance, intensity and likelihood will be determined by the owner-manager’s belief in their self improvement.

RESEARCH METHODS

The Centre’s 2009 survey involved 4,165 New Zealand SMEs (defined as < 100 employees) using a database of firms provided by APN Infomedia, a commercial provider of business-to-business information in New Zealand. There were 1,447 usable responses after excluding 297 ineligible and unreachable firms. The overall response rate was 35%, which is well above an acceptable rate for this type of mail survey (Bartholomew & Smith 2006). The study followed Dillman’s (2000) Total Design Method (TDM) in choosing the sample, developing, designing and pilot testing the questionnaire. BusinessSMEasure is a postal survey. The mail survey was carried out between 9 October and 18 December 2009 using a four stage approach at an interval of two weeks. The first mail-out contained an information letter and the survey questionnaire. Step two in the mail-out process entailed a postcard reminder. This was followed up by another reminder letter with survey questionnaire and the final step was another postcard reminder. The survey form was addressed to the owner, owner-manager or managing director. In order to check for non-response bias, a comparison on the demographic profile (gender, ethnicity, legal form of firm and family firm) was made between respondents who replied to both 2008 and 2009 surveys and those who replied in 2008 but did not reply in 2009, following Armstrong and Overton’s (1977) approach. The insignificant differences between the two groups of respondents suggested that non response bias was non-existent or too small for detection.

To account for common method bias, given that the study used a single instrument to measure all the variables of the study, Harman’s single-factor test was performed on selected items (Podsakoff et al. 2003). The un-rotated factor solution reported seven underlying factors with eigenvalues greater than 1. These seven factors accounted for variances ranging from 3.89% to 24.39% and no factor accounted
for more than 50% of the total variance. The results offered some evidence that the common method bias per se, could not explain the variations in the responses to the questions.

In the survey questionnaire we have included five items to measure owner-managers belief of self-improvement (Maurer et al. 2003). Improvability belief is a psychological construct that measures if people believe that it is possible to develop, change or improve specific types of knowledge and skills. Individual differences in this belief might explain why some owner-managers are more capable of managing regulation than others. From a theoretical perspective, it can be argued that improvability beliefs result in more favourable attitudes towards learning and development which in turn should result in a higher engagement in developmental activities.

Structural equation modelling (SEM) was the main tool to test the propositions of the study aided by EQS 6.1 software (Bentler, 1995). SEM is a multivariate statistical technique to confirm the causal relationships of latent variables in a model strongly guided by theory. Using Anderson and Gerbing’s (1988) two step approach, this study developed and confirmed an effective measurement model using confirmatory factor analysis. Subsequently, the study analysed the structural model depicting the hypothesised relationships of the constructs. An explanation of the measurement of the dependent and independent exogenous variables follows. Dependent/endogenous variables. The dependent variables in this study are the intensity of engagement in three sources of learning, importance of the three sources of learning, and the likelihood of future engagement with the three sources of learning. The intensity of engagement refers to the extent to which the SME owner-manager has engaged in specific activity in the past 12 months. The respondents were asked on a five point Likert scale the intensity of their engagement in the three sources of learning. The importance of the three sources of MD refers to the degree to which the sources of learning were perceived by SME owner-managers as important in improving their management knowledge and skills. The respondents were asked on a five point Likert scale the level of importance of the three sources of MD. The likelihood of future engagement with the three sources of learning refers to the likelihood that the SME owner-manager will undertake each of the items in the next 12 months. The respondents were asked on a five point Likert scale the likelihood of engaging in the three sources of learning. Independent/exogenous variables. Six items were used to measure learning orientation (e.g. In my current role, I often read materials related to my work to improve my ability). These items were adopted from VandeWalle (1997). Five items were used to measure belief on self-improvement (e.g. In my current role, I believe that I possess the skills and abilities needed to develop, grow and learn). These items were adopted from Maurer et al (2003). Responses to the items were in a 5 point Likert scale.

RESULTS

Confirmatory factor analyses (CFA) was performed on the two independent variables and the dependent variables, namely intensity, importance, and likelihood to engage in three categories of sources of learning using maximum likelihood method with robust confirmatory technique (Brown, 2006). CFA is a tool that seeks to determine if the number of factors and the loadings of measured indicators or variables on the factors conform to what is expected on the basis of pre-established theory (Brown 2006). The indicators or items were pre-selected or assumed to load to a specific factor or construct based on prior strong theoretical, conceptual or empirical evidence (Brown, 2006; Hair et al., 2006). Details of the CFA are shown in table 1.

The overall goodness of fit indices indicated that the measurement model fit the data well as evidenced by the goodness of fit measures in table 2. The values of the Normed Fit Index (NFI) and Comparative Fit Index (CFI) were equal to or above the minimum acceptable value of .90 whilst the Root Mean Square Error of Approximation (RMSEA) was below the minimum of 0.9 suggesting the predicted measurement model did not significantly differ from the data. NFI is a measure that indicates whether
there is improvement in the fit between the data and the identified model relative to a null model when all items are allowed to load freely in any construct (Hair et al. 2006). CFI is a measure that indicates whether there is improvement in the fit between the data and the identified model relative to a null model when the items are assumed to be uncorrelated. RMSEA is a measure to check if the proposed model is too complex for the data at hand (Hair et al. 2006). The x² test is a general measure of discrepancy between the identified model and the data structure. A non-significant x² test result indicates fit between model and data. Whilst the x² tests in the present analysis reported significant results, Hair et al. (2006) noted the instability and lack of reliability of the chi-square test for studies with large sample sizes. Hence, the need for other measures like NFI and CFI. Moreover, the results of the ROBUST technique offered by EQS to examine the model in case of slight departures from the normality assumption of data distribution provide further confirmation of the results generated by the maximum likelihood method. Re-specification of the measurement model was no longer performed as the modification indices, namely Lagrange Multiplier (LM) and Wald tests provided by EQS (Bentler, 1995) indicated that no significant improvement could be gained from dropping items in the lower scale of factor loadings.

{Tables 2 and 3 about here}

Overall, the results of the test of the measurement model-data fit suggested that the constructs used in this study possessed satisfactory level of content and construct validity, internal consistency (i.e. reliability), convergent as well as discriminate validity. Table 3 shows the correlation of the constructs used in the study. Results from fitting the structural model to the data using maximum likelihood technique showed satisfactory results as shown by the goodness-of-fit measures shown in figure 2. The structural model shows the effects of learning orientation and belief on self-improvement on the intensity, importance and likelihood to engage in three sources of learning. The model also shows the effects of the level of importance of each source of learning on the intensity of previous engagement and likelihood to engage in a particular source of learning.

{Figure 2 about here}

**INTERPRETATION OF RESULTS**

The results showed that learning orientation is positively and significantly associated with all but one variable in the structural model, namely likelihood to engage in practice-based sources of learning. Learning orientation (along with belief in self-improvement and level of importance attached to practice-based sources of learning) explained 38% in the variations in the intensity of owner-managers to engage in the sources of learning using practice-based sources. Likewise learning orientation (along with the level of importance attached to practice-based sources of learning) explained 50% and 51% of the variations in the intensity of owner-managers to engage in the sources of learning using distal and proximal sources respectively. The r² values represent medium to large ‘effect size’ which suggests that the relationships between learning orientation and the intensity of engagement with the three sources of MD are substantively meaningful from which valid inferences could be drawn (Cohen, 1992; Field, 2005; Pedhazur, 1982). It is logical to infer that SME owner-managers with high levels of learning orientation are likely to have high levels of intensity with their engagement in three types of sources of learning. SME owner-managers with high learning orientation are more likely to report that they are previously engaged in distal sources, followed by proximate and practice-based based sources. Owner-managers with higher levels of learning orientation are more likely to report that they have engaged in distal sources of learning, followed by practice-based and proximate-based sources. In terms of likelihood to engage, owner-managers with high learning orientation are more likely to engage in distal sources of learning relative to other sources although learning orientation is positively associated with all of the three sources of learning.
SME owner-managers' belief on self-improvement were shown to have relatively weaker relationships with the three sources of learning. The results indicate that belief in self-improvement is positively and significantly associated only with intensity and likelihood to engage in practice-based sources of learning. However, across all three measures: that is, likelihood, importance and intensity of engagement, belief on self-improvement is positively associated. Therefore, the greater the belief in self-improvement the greater will be the likelihood of such engagement and the greater will be the take-up and intensity. There is a less strong association with proximal sources. Since this refers to the potential development that would be seen with trusted advisers and mentors, it suggests that owner-manager with high belief in self-improvement do not see high value in proximal learning sources. Similar results are shown in Figure 2 for distal sources of learning; that is, a weaker association between belief in self-improvement and the three areas of likelihood, importance and intensity of engagement. The level of importance attached to the three sources of learning is also positively and significantly associated with intensity of engagement and likelihood to engage in the three sources of learning. For instance, high level of importance attached to practice-based sources is positively and significantly associated with more intense engagement in practice-based sources (i.e. coefficient of .62) and higher likelihood to engage in practice-based sources of learning (i.e. coefficient of .51). The results suggest that the intensity of engagement by SME owner-managers in the three sources of learning is partly explained by the level of importance they attached to these sources of learning. Likewise, the likelihood of engaging in the three sources of learning also depends partly on the extent of importance SME owner-managers attach to these sources of learning.

**DISCUSSION AND CONCLUSIONS**

It has been well established in the literature that there is a lack of engagement of owner-managers in SMEs with formal sources of management development and learning. Indeed as indicated by previous writers such as Storey and Westhead (1997) it can be argued that there is a position of market failure arising from the mismatch between market provision and demand from SMEs. Other writers have pointed to the importance of informal and practice-based types of learning for owner-managers in SMEs. Despite this well known situation for SMEs and engagement with formal management development programmes, there has been little work that has examined the motivation and key drivers of owner-managers’ participation in different types of learning, nor has there been work to examine the factors that influence participation. In this paper we have developed a predictive model based on two propositions. The two propositions are concerned with; firstly, owner-manager learning orientation and, secondly, owner-managers’ belief in self-improvement. Our results suggest that learning orientation and belief in self-improvement can explain a significant part of owner-manager engagement in different sources of learning and associated MD activities, although the extent varies according to whether this is practice-based, proximal or distal.

The results which are shown in figure 2 and discussed in our interpretation allow us to modify our original model of the SME as a learning organisation. Our insight is to recognise the importance of owner-managers, their beliefs in improvement and their learning orientation. This approach builds on the theoretical framework provided by the Gibb model (figure 1), which it is arguable conceptualises the small business as a learning organisation. Space limitations mean that this further work cannot be shown here, but it feasible to add extra dimensions to the theoretical framework to modify figure 1. This model gives greater insights to the processes of participation in management development activities.

Much of the previous research on management development has examined external barriers (Kitching & Blackburn, 2002). Our study and this paper’s contribution is focused on internal barriers connected with owner-manager attitudes to learning and owner-manager belief in self improvement. In this paper we have developed propositions associated with learning orientation and belief in self improvement. Previous research has focused on SME firm characteristics, such as a lack of resources, firm size and network engagement as explanations of the known low take-up of formal provision of management development programmes and capacity building initiatives (Fuller-Love, 2006). These studies have
assumed that participation is driven by the demographic and profile characteristics of SMEs, such as size and sector. Our contribution is to point to the importance of owner-managers’ beliefs and orientation, factors which have tended to be ignored in previous studies. We have modelled this process to indicate the importance of determinants.

References


Lawless, N., Allan, J. & O’Dwyer, M., (2000) “Face-to-face or distance training: two different approaches to motivate SMEs to learn” Education & Training, 42 (4/5), 308-316


### Table 1 Confirmatory Factor Analysis

<table>
<thead>
<tr>
<th>Constructs and Corresponding Indicators</th>
<th>Standardised Factor Loading*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intensity</td>
</tr>
<tr>
<td><strong>Practice-based Sources</strong></td>
<td></td>
</tr>
<tr>
<td>Carrying out everyday managerial work activities</td>
<td>0.63</td>
</tr>
<tr>
<td>Reviewing what I did and thinking about how to do it</td>
<td>0.87</td>
</tr>
<tr>
<td>Discovering what does and does not work (trial and error)</td>
<td>0.88</td>
</tr>
<tr>
<td>average variance extracted</td>
<td>0.54</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.76</td>
</tr>
<tr>
<td><strong>Proximal Sources</strong></td>
<td></td>
</tr>
<tr>
<td>Learning from suppliers or customers</td>
<td>0.61</td>
</tr>
<tr>
<td>Getting advice from an accountant/bank manager</td>
<td>0.81</td>
</tr>
<tr>
<td>Learning from other people running a business</td>
<td>0.63</td>
</tr>
<tr>
<td>Learning from family and/or friends</td>
<td>0.65</td>
</tr>
<tr>
<td>average variance extracted</td>
<td>0.74</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Distal Sources</strong></td>
<td></td>
</tr>
<tr>
<td>Reading books, journals and/or information on the management of business</td>
<td>0.62</td>
</tr>
<tr>
<td>Attending occasional off-site management training courses, seminars and workshops</td>
<td>0.70</td>
</tr>
<tr>
<td>Studying university and/or polytechnic courses</td>
<td>0.63</td>
</tr>
<tr>
<td>Being mentored or coached</td>
<td>0.60</td>
</tr>
<tr>
<td>Getting information from business events</td>
<td>0.72</td>
</tr>
<tr>
<td>Getting information provided by government agencies</td>
<td>0.64</td>
</tr>
<tr>
<td>Getting information from Chambers of Commerce, economic development agencies, and professional bodies</td>
<td>0.69</td>
</tr>
<tr>
<td>Joining a group of business owners reviewing current business issues</td>
<td>0.69</td>
</tr>
<tr>
<td>average variance extracted</td>
<td>0.85</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Learning Orientation</strong></td>
<td></td>
</tr>
<tr>
<td>In my current role:</td>
<td>Standardised Factor Loading*</td>
</tr>
<tr>
<td>I often read materials related to my work to improve</td>
<td>0.65</td>
</tr>
<tr>
<td>I am willing to select a challenging task that I can succeed at</td>
<td>0.81</td>
</tr>
<tr>
<td>I often look for opportunities to develop new skills and abilities</td>
<td>0.83</td>
</tr>
<tr>
<td>I enjoy challenging and difficult tasks where I'll learn from them</td>
<td>0.83</td>
</tr>
<tr>
<td>Development of my ability is important enough to take time</td>
<td>0.84</td>
</tr>
<tr>
<td>I prefer to work in situations that require a high level of ability and talent</td>
<td>0.63</td>
</tr>
<tr>
<td>average variance extracted</td>
<td>0.54</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>Belief on Self-improvement</strong></td>
<td></td>
</tr>
<tr>
<td>In my current role, I believe that:</td>
<td>Standardised Factor Loading*</td>
</tr>
<tr>
<td>I have what it takes to be a person who can learn new things and improve myself</td>
<td>0.87</td>
</tr>
<tr>
<td>I possess the skills and abilities needed to develop, improve, and change</td>
<td>0.88</td>
</tr>
<tr>
<td>I really do not have what it takes to continually improve and learning (reverse)</td>
<td>0.69</td>
</tr>
<tr>
<td>There are skills and qualities that people need to be able to learn, grow, and develop, and that I have those skills and qualities.</td>
<td>0.69</td>
</tr>
<tr>
<td>I have the capabilities and qualities to be continually learning, improving, and developing</td>
<td>0.81</td>
</tr>
<tr>
<td>average variance extracted</td>
<td>0.63</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.78</td>
</tr>
</tbody>
</table>
### Table 2: Goodness-fit-indicators of the Measurement Model

<table>
<thead>
<tr>
<th>Constructs</th>
<th>$\chi^2$</th>
<th>NFI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Orientation</td>
<td>215.30, 9 df, $p = .00$</td>
<td>.95</td>
<td>.95</td>
<td>.05</td>
</tr>
<tr>
<td>Belief on self-improvement</td>
<td>234.25, 5 df, $p = .00$</td>
<td>.93</td>
<td>.94</td>
<td>.08</td>
</tr>
<tr>
<td>Intensity - Practice-based, Proximate, and Distal sources</td>
<td>736.73, 87 df, $p = .00$</td>
<td>.91</td>
<td>.90</td>
<td>.06</td>
</tr>
<tr>
<td>Importance - Practice-based, Proximate, and Distal sources</td>
<td>841.22, 87 df, $p = .00$</td>
<td>.90</td>
<td>.91</td>
<td>.07</td>
</tr>
<tr>
<td>Likelihood to Engage - Practice-based, Proximate, and Distal sources</td>
<td>1089.14, 87 df, $p = .00$</td>
<td>.90</td>
<td>.90</td>
<td>.06</td>
</tr>
</tbody>
</table>

### Table 3: Correlation Matrix

<table>
<thead>
<tr>
<th>Constructs</th>
<th>mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning orientation</td>
<td>3.8</td>
<td>.63</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Belief in self-improvement</td>
<td>4.0</td>
<td>.53</td>
<td>.57*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Intensity - Practice-based</td>
<td>3.5</td>
<td>.87</td>
<td>.36*</td>
<td>.32*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Intensity - Proximate sources</td>
<td>2.6</td>
<td>.82</td>
<td>.32*</td>
<td>.21*</td>
<td>.40*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Intensity - Distal sources</td>
<td>2.0</td>
<td>.72</td>
<td>.43*</td>
<td>.24*</td>
<td>.34*</td>
<td>.57*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Importance - Practice-based</td>
<td>3.9</td>
<td>.76</td>
<td>.40*</td>
<td>.34*</td>
<td>.61*</td>
<td>.37*</td>
<td>.28*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Importance - Proximate sources</td>
<td>3.2</td>
<td>.81</td>
<td>.27*</td>
<td>.17*</td>
<td>.27*</td>
<td>.70*</td>
<td>.37*</td>
<td>.43*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Importance</td>
<td>2.7</td>
<td>.83</td>
<td>.37*</td>
<td>.18*</td>
<td>.19*</td>
<td>.40*</td>
<td>.68*</td>
<td>.32*</td>
<td>.60*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Distal sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Likelihood - Practice-based</td>
<td>4.0</td>
<td>.99</td>
<td>.32*</td>
<td>.31*</td>
<td>.52*</td>
<td>.27*</td>
<td>.22*</td>
<td>.58*</td>
<td>.32*</td>
<td>.21*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Likelihood - Proximate sources</td>
<td>3.2</td>
<td>.86</td>
<td>.31*</td>
<td>.22*</td>
<td>.33*</td>
<td>.68*</td>
<td>.39*</td>
<td>.40*</td>
<td>.77*</td>
<td>.43*</td>
<td>.48*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. Likelihood - Distal sources</td>
<td>2.6</td>
<td>.81</td>
<td>.44*</td>
<td>.26*</td>
<td>.29*</td>
<td>.42*</td>
<td>.33*</td>
<td>.33*</td>
<td>.46*</td>
<td>.77*</td>
<td>.40*</td>
<td>.59*</td>
<td>1</td>
</tr>
</tbody>
</table>

*significant at $p < .05$
Figure 1: Sources of Learning and SMEs as Learning Organisations

(Following Gibb, 1997 The Small Business as a Learning Organisation)