

Strategic Development for Manufacturing Small & Medium Enterprises (SMEs) in Namibia

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Abstract As a result of the recent world economic and financial crises, international competition and growing requirements from key clients and main suppliers, several manufacturing SMEs experience emergent pressure to innovate and develop their organisations. Despite heightened awareness and interest by both scholars and practitioners in studying and better understanding entrepreneurship and SME development, strategic development for SMEs is still an emerging field of inquiry. Furthermore, limited research has so far been conducted on strategic development for SMEs in the Namibian context. A review of the literature on strategic development revealed a research gap that culminated in the following research question: What is the influence of the education, experience and entrepreneurial orientation (EO) of SME owner-managers on the level of strategic development of their firms? An empirical study of 100 Namibian manufacturing SMEs was conducted to answer this research question.

Keywords Strategic development, Manufacturing SME, Namibia

1. Introduction

Small and Medium Enterprises (SMEs) play an important role in the economy of developed and developing countries. Across the world, the SME sector is regarded as the backbone of the economy. Not only does this sector provide employment and income opportunities, but in many countries, it also takes the lead in technological innovation, diversification of production processes and intensification of international trade activities (NEPRU, 2005).

According to Raymond (2000), a number of interrelated phenomena such as the liberalisation of trade, the internationalisation of markets, globalisation, deregulation, the knowledge economy, e-business, and many other new forms of organisations, pose tremendous new challenges to SMEs.

Several manufacturing SMEs are experiencing international competition and growing requirements from key clients and main suppliers (Yeoh, 2009). Generally less equipped in financial, technological and human resources than big enterprises, SMEs however have advantages in terms of suppleness, reaction time, and innovation capability that make them central actors in the new economy (Raymond, 2000).

In this multifaceted trade atmosphere, SMEs must embrace development so as to stay competitive and hence

survive, grow, and flourish (Skandalakis & Nelder, 2001). This development can be achieved in three ways. One way is by innovating, which means to craft new products for current and potential consumers (Roper & Love, 2002). Another way is to build up new markets for their products—that is- to expand from a neighbourhood or regional market to a national or international market (Levrato, 2002). This implies alliance and partnerships with clients, suppliers, distributors, competitors and other organisations such as consulting firms and research centres (Gulati, 1998; Smedlund, 2007; Evanschitsky, et al., 2007), as well as umbrella organisations such as Chambers of Commerce and specific associations for specific trades and branches. In this paper, we have termed these three approaches as ‘strategic development’.

Berte, et al. (2010), while arguing in the context of small technology-based firms, state that to support their expansion and diversification, these firms must choose a growth plan that takes into account the product, market, expected firm size, know-how and organisational structure as chosen strategies which will in turn will impact the direction and the market placement of the firm. Manufacturing SMEs, which by definition are to a degree technology-dependent therefore have to pay attention to their strategic development (Beaver, 2007; Megicks, 2007) in terms of their markets, products and also networks. The fact that SMEs seldom devote appropriate time to this issue has been well documented (Heriot & Loughman, 2009).

In small and medium-sized enterprises, deep-seated decisions and choices in terms of strategic development are taken by their owner-managers (Kotey & Meredith, 1997).

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It therefore stands to reason that owner-managers' knowledge and skills as well as their entrepreneurial orientation (EO) will influence these decisions and the enterprise.

2. Literature Review

This section reviews literature on different variables that will be emphasized in the study. The section defines an "SME" from different perspectives, discusses strategic development- consisting of three elements: product, market and network development, and then defines education and experience, and entrepreneurial orientation (EO).

2.1. Defining Small and Medium Enterprises (SMEs)

According to Beyene (2002), there is no universally accepted definition of SMEs. He states that definitions in different countries lack uniformity and reflect the relative economic development of the respective economies. He notes that in the United States of America (USA), for instance, a small business is defined as any business with fewer than 500 employees. He argues that this definition may represent a medium to large enterprise in the African context.

He further states that, unlike other countries, South Africa uses an elaborate categorisation of survival, micro enterprises, small enterprises, medium enterprise and large enterprises. Small enterprises have from 5 to 50 employees, while medium enterprises often employ up to 200 persons and have capital, excluding property, of about 5 million Rand. The abbreviation "SME" is commonly used by the European Union, the World Bank, United Nations and the WTO (Lahiri, 2011).

In Namibia, the government defines a small business in the manufacturing sector as a firm with fewer than 10 employees, has a turnover of less than N\$1,000,000 and with capital of less than N\$500,000. In all other economic sectors, a small business is defined as one which employs fewer than 5 persons, whose turnover is less than N\$250,000 and capital employed of less than N\$100,000 (NEPRU, 2002).

The size and characteristics of SMEs as officially defined by the Ministry of Trade and Industry (MTI) are provided in Table 2.1.

Table 2.1. Definition of Small Business by MTI

Sector	Number of employees	Annual turnover	Capital employed
Manufacturing	Fewer than 10	N\$1,000,000	N\$500,000
All other sectors	Fewer than 5	N\$250,000	N\$100,000

Note: To be classified as an SME, the criterion of number of employees must be met, plus one of the two other criterions (turnover or capital employed).

Source: Republic of Namibia (1997).

2.2. Strategic Development of SME

Scholars such as Ansoff (1957) concluded early on that small and medium enterprises can develop their business processes along two axes- that is- markets and products.

Augmenting sales of existing products to existing markets (market penetration), discovering new markets for existing products (market development), crafting new products for existing markets (product development), and building new products for new markets (diversification) represent four fundamental internal growth strategies for these organisations. Lately however, with the arrival of globalisation, and with new information and communication technologies, some SMEs, and high growth firms in particular, have been found to grow along a third axis- that is- in terms of networks that link them with clients, suppliers, and other business partners in joint relationships (Morgan and Hunt, 1999), as shown in Figure 2.1.

The typological illustration presented in Figure 2.1 shows that SMEs are deemed to be "world-class" when they are adequately developed along all three axes to be competitive on an international scale (Harrison, 1998). Every axis of development has been subjected to empirical investigations in quest of understanding two basic questions. The first question is concerned with understanding the nature of the development activities themselves, be they associated with expanding markets, innovating or partnering. The other question relates to the environmental, organisational and individual determinants or antecedents of these activities.

Researchers (Koufteros *et al.*, 2002; Simon *et al.*, 2002; van Dijk *et al.*, 1997) have studied the product novelty process in particular, including its entrepreneurial and internal perspective in SMEs. The participation of owner-managers and their firms in different types of social or commercial networks has been considered as to its nature, background and consequences (e.g. Ebers and Jarillo, 1998; Freel, 2000; Hakansson and Schakenraad, 1994), as well as the result of networks upon innovation activities of SMEs (e.g. Hanna & Walsh, 2002; Lee & Jang, 1998).

2.2.1. Network Development

Collaboration is vital for resource-poor SMEs to accomplish development. Networks help SMEs achieve economies of scale. They can bring new value-added products to market more quickly and can market more effectively than a single SME can. For example, speciality food producers and organic meat producers can work cooperatively to market their wares, buy refrigerated trucks or storage, or create training modules. They can therefore maintain their flexibility but still share financial, human and relational capital with others so as to reduce the risks associated with the new global business environment. Networking might make an SME more dynamic by boosting its supply chain management (Raymond, 1997) and its customer relationship management (Kalwani & Narayandas, 1995).

According to Goleman (2002), partnership agreements allow organisations to benefit from market opportunities and react to customer needs in collaboration, allowing them to more efficiently and effectively do so than they possibly will separately.

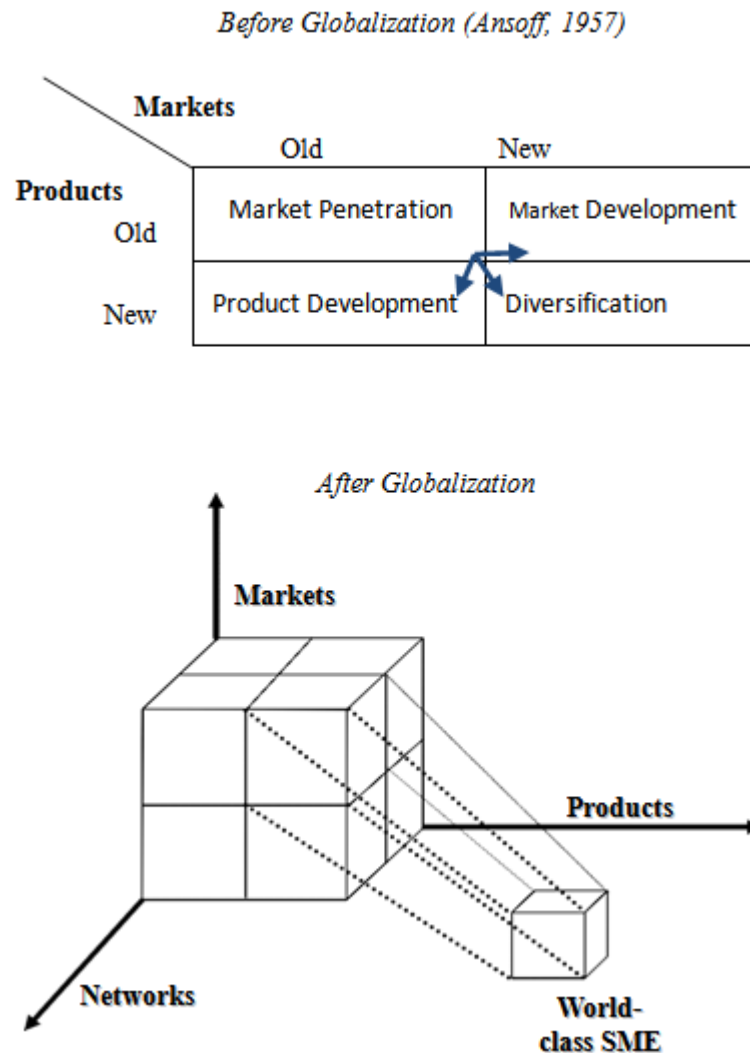


Figure 2.1. Axes of SME development

Gulati (1998) defines network development or strategic partnering as collaboration and partnerships with customers, suppliers, distributors, competitors and other organisations such as consulting firms and research centres. Moreover, Goleman (2002) states that network development means the following: spreading risk and expecting others to perform in mutual best interests; seeking a tactical fit among partners so that goals match and action plans show synergy; finding complementary skills, competences and resources in partners; and sharing privileged or confidential information. According to Wincent and Westerberg (2005), small firms need to manage social and professional networks with other actors and are therefore no longer considered as individual and self-fulfilling units that do not require other actors to be competitive. Rather the individual firm can be seen as an “organiser” that interacts with other actors in order to be able to carry out a strategy and build competitive advantage that is far beyond the scope of the single firm. All collaborating partners can focus on their core business and by interlinking these, competitive advantage can be achieved. Having a capability to know about and make use of other firm’s

resources seems to be a valuable asset in the harsh competitive landscape of today’s business environment (Wincent & Westerberg, 2005; Smedlund, 2007).

The literature offers benefits of networking for small firms such as right to use to technical or commercial resources (Hoang and Antoncic, 2003; Baum *et al*, 2000), improving organisational learning (Kale *et al*, 2002; Oliver, 2001) and innovation (Pittaway *et al*, 2004; Powell *et al*, 1996). In the preliminary stages of a small firm’s life, it needs access to more external information and guidance. This dependence persists also after the preliminary stages. Access to external knowledge could result into better performance. SMEs may as well use their network as a foundation for “idea generation and gather information to identify entrepreneurial opportunities” (Hoang and Antoncic, 2003). An essential but less appreciated advantage of networking manifests itself in the form of social standing and respect. When an SME joins a network, they stand for that network. This is then of assistance to them in getting noticed and acknowledged easily within their respective industry. However, it is imperative to select the correct partners because an unknown

firm will not add much value to the firm's standing. This gain of authenticity exists even when the network fails to attain its core objectives (Stuart, 2000; Bradley *et al.*, 2006; Baum and Oliver, 1991).

Strategic partnering improves a firm's aptitude to learn and realize competitive advantage. However, learning from networking is not easy. Moreover, inferred knowledge is a hefty part of learning which cannot be readily transferred (Oliver, 2001). Therefore, SMEs have to be proficient enough to identify and use outside knowledge for learning, which strongly relates with the theory of "absorptive capability" i.e. a firm's ability and capacity to identify and make use of outside knowledge for commercial accomplishment (Cohen and Levinthal, 1990). Oliver (2001) argues that learning from networking is not linear throughout the life cycle of SMEs. Enterprises change their way of learning from networking based on their experience and needs. Experience gained from networking can aid an SME in making the best from their networks (Anand and Khanna, 2000). The "locus of innovation" is no longer within individual firms but in their network (Powell *et al.*, 1996). This relays back to the logic of learning from networking. When SMEs operate in collaboration, new ideas surface because each SME brings their distinctive competence to the network. The probability of success with innovation is also likely to increase, when it is developed in a network, as it tends to be more technologically and economically feasible (Pittaway *et al.*, 2004).

The challenge that remains for SME owner-managers is how to establish and manage the network to realise the benefits offered (Trim, *et al.*, 2008).

2.2.1.1. Network Capability

Walter *et al.* (2006) define networking capability as a firm's "ability to develop and make use of inter-organizational relationships to gain access to a variety of resources held by other actors". Kale *et al.* (2002) note that it is not sufficient to build networks – it is also crucial for SMEs to accomplish network success. Managing networks is not straightforward. An SME has to put some efforts in developing trust with partners, sharing resources and working closely for efficiency. Or else, inter-organizational ties - also termed as "inter organizational learning linkages" (Cohen & Levinthal, 1990) - would just lead to loss of efforts and resources (Gulati *et al.*, 2000). SMEs with high networking capability should not only be able to spot strategic partners but also sustain close relations (Walter *et al.*, 2006).

According to Walter *et al.* (2006), networking capability is a concept consisting of four elements, i.e. *coordination*, *relationship skills*, *partner knowledge*, and *internal communication*. All these elements are different but would often appear interrelated. For instance, when SMEs have good relationship skills they would be able to have access to external knowledge, which in turn makes possible for them to develop their partner knowledge. An SME's coordination

activities can help them in synchronizing with different external partners and achieving mutual advantages. But just establishing relation with a firm is not sufficient, since interpersonal skills i.e. ability to maintain a healthy relationship, is also of the essence. A vital characteristic of relationship skills is related to individuals because firms do not have relations but rather individuals/employees who cultivate these relationships. Hence, SMEs need to be cautious while assigning responsibility to individuals for managing such relations. SMEs should also focus on understanding their partners and enhancing partner knowledge. Partner knowledge is an essential component of networking capability. This type of partner knowledge can lead to unwavering and long-term relationships between different actors because they would understand each other's needs and wants better. Furthermore, successful *internal communication* is the lifeblood of all organizations. Above all, from a relationship viewpoint, it is vital that internally, everyone in the organization speaks the same language. This can only be achievable when everyone is regularly updated about information of their partners, such as a change in agreements (Walter *et al.*, 2006).

SMEs with high networking capability will be able to discover potential partners, establish relationships, and use and share each other's resources and competences. Anand and Khanna (2000) argue that not all inter-firms relations are advantageous, since some relations can be complicated to manage and complex in nature. Therefore, SMEs need to advantageously position themselves in a network because this endows them with the ability to successfully search for selective strategic partners (Hagedoorn *et al.*, 2006). SMEs also need to be careful when selecting partners for two reasons: first, some partners can bring very important knowledge and information which fosters the learning process (Lorenzoni and Lipparini, 1999); second, collaborating with highly credible partners adds value to an SME's standing in form of authenticity (Stuart, 2000). The aptitude to build and handle a partnership is important in all industries, but the significance of such competence is particularly high in the manufacturing SME sector. In this industry, the business atmosphere is rapidly changing, and this forces SMEs to innovate frequently. Many scholars believe that networking can boost a firm's ability to be innovative (Pittaway *et al.*, 2004; Powell *et al.*, 1996).

2.3. Owner-Manager's Education and Experience

Small and Medium Enterprises are considered to be organic to the extent that their strategy, organization and culture are personified by their owner-managers. The principal goals and features of owner-managers are therefore essential in establishing the firm's level of innovation and orientation towards product uniqueness and technological superiority (Miller, 1993). Studies have revealed that the formerly acquired knowledge and experience of SME owner-managers influence their managerial conduct (Thong, 1999). A main constituent in the small firm's learning

experience is the owner-manager's individual learning (Riemenschneider & Mykytyn, 2000). Domain-specific knowledge which comes with experience in specific manufacturing sector, as well as more general knowledge obtained from higher education, would consequently influence the entrepreneur's awareness of the various strategic development practices to be assimilated and integrated by the organisation.

2.4. Entrepreneurial Orientation (EO)

Business conventions and practices which have been accepted for many years are no longer effective (Vargha and Pettigrew, 2001; Haynes, Becherer and Helms, 1998). This unpredictability is typical of hostile environments that require an entrepreneurial orientation to negotiate successfully (Covin and Slevin, 1989).

It is often argued that innovation is one characteristic that distinguishes entrepreneurial businesses from those that are not (Carland *et al.*, 1984). Miller (1983) and Covin and Slevin (1989) define entrepreneurial orientation as the extent to which small business owners will be inclined to develop *innovative* products, undertake moderate *risk* and be *proactively* orientated towards competitors. Furthermore, Schumpeter (1934) argued that taking risks is inherent to the ownership of a business. This view was supported by the research of Brockhaus (1980) who suggested that risk-taking could be used as a characteristic to distinguish between entrepreneurs and non-entrepreneurs. Covin and Slevin (1989) argued that entrepreneurial conduct entails taking more risks than non-entrepreneurial behaviour. In other words, the concept of risk can be viewed as existing in a continuum with non-entrepreneurial businesses embracing moderate or low risk, and entrepreneurial firms taking higher degrees of risk.

In addition to innovation and the taking of risks, entrepreneurial orientation includes the degree to which managers embrace change (Covin & Slevin, 1989; Miller, 1983; Miller & Friesen, 1983). This view was supported by Hills and LaForge (1992) who, in a review of the entrepreneurship literature, concluded that entrepreneurship requires the creation of new entities, innovation, uniqueness and growth.

Many authors have assessed entrepreneurial orientation by appraising firm tendencies in terms of proactiveness, innovativeness, and risk taking (Wiklund, 1999; Wincent and Westerberg, 2005). *Innovativeness* refers to a firm's readiness to support new ideas, creativity and experimentation, which will result in changing the firm's traditional business practices. *Proactiveness* refers to a firm's ability to be geared up for any unanticipated situation and acting at an early stage. This may assist a firm to transform threats into opportunities. Finally, *risk-taking* refers to a firm's inclination to take bold actions, which may cause considerable losses. It also means that a firm might venture into investments where outcomes are unknown but promising (Lumpkin and Dess, 1996).

3. Research Model and Hypotheses

A research objective provides a broad indication of what a researcher wishes to achieve through the study. Scheepers (2007) argues that the definition of the research problem is of considerable importance since it guides subsequent actions. The *aim* of this study is *to determine how the education, industry experience and entrepreneurial orientation of an SME owner-manager influence the firm's strategic development*.

When a proposition is formulated as a statement for empirical testing or assessment, it is referred to as a 'hypothesis'. Hypotheses are educated guesses about a problem's solution, or expectations about groups in a population expressed in empirical testing (Terre Blanche & Durheim, 2002; Sekaran, 1992). The functions of hypotheses are to provide a framework for and give direction to the study. Moreover, hypotheses create certain boundaries or limits within which a problem should be examined (Scheepers, 2007).

Given the research questions and the literature reviewed, this study seeks to add to the body of knowledge in the field of strategic development for manufacturing SMEs by proposing and testing a model that is made of two sets of hypotheses. The first set focuses on the entrepreneurial and strategic environments that are linked to the firm's development, i.e. that are helpful to higher networking propensity, market development and product development in manufacturing SMEs. The second set proposes network development as a precursor to market and product development in the SMEs.

As already discussed in Section 2.3, domain-specific knowledge acquired from experience in a specific manufacturing sector as well as more general knowledge gained from higher education will influence the owner-manager's understanding of the different strategic development practices to be incorporated and combined by the SME (Riemenschneider & Mykytyn, 2000); therefore the first hypothesis:

- H1.1: *There is a relationship between the education and experience of an SME owner-manager and the strategic development of the SME.*

An SME's strategic orientation is its reaction to its surroundings. As these surroundings become more hostile or multifaceted, SMEs with an aggressive entrepreneurial orientation amplify their competitiveness by exploring new markets and focusing on technological leadership and product novelty (Özsomer *et al.*, 1997). This orientation converts into a manufacturing approach (Dean & Snell, 1996). Known that development practices such as the implementation of highly developed manufacturing technology has been linked to its manufacturing approach (Lefebvre *et al.*, 1992), the next hypothesis is developed:

- H1.2: *There is a relationship between strategic development and an aggressive entrepreneurial orientation (EO).*

Because of new opportunities and threats in their environment resulting from globalisation, and their own strengths and weaknesses, many manufacturing SMEs view their involvement in new forms of organisation based on networks as their most important mean of development (Julien & Lachance, 2001). In order to grab opportunities and balance for weaknesses, SMEs wishing to develop into new markets can set up distribution or marketing partnerships with other local, regional or international firms (Sethuraman *et al.*, 1988).

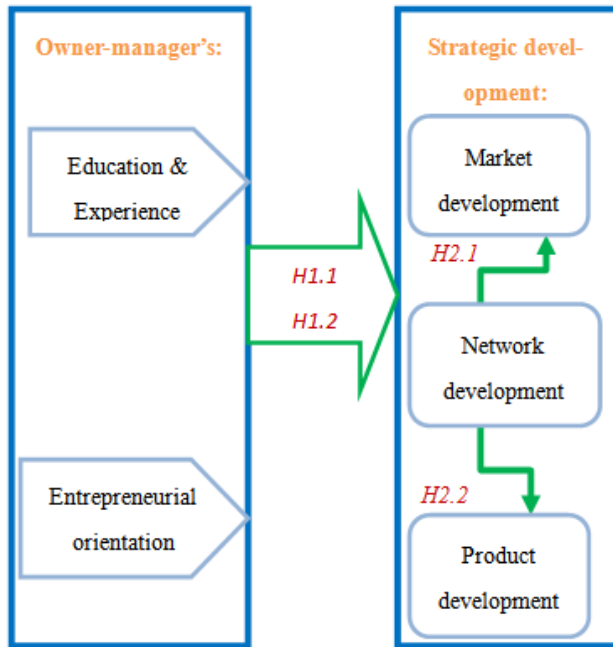


Figure 3.1. Axes of SME development

To reduce commercial insecurity and to amplify their capacity for innovation and product development, SMEs can also establish R&D partnerships with competitors and main suppliers (St-Pierre & Mathieu, 2003), as well as research centres and/or universities (van den Ende & Wijnberg, 2001); therefore the following hypothesis:

- H2: *There is a relationship between the development of a manufacturing SME's networks and the development of its markets and the development of its products.*

This last hypothesis (H2) is a set that comprises two components, namely *H2.1* and *H2.2*.

4. Methodology

This study was an exploratory study of strategic development in manufacturing SMEs in Namibia. The population for the study was manufacturing SMEs operating in Windhoek. The sample was selected from a list of manufacturing SMEs in the Khomas region (Windhoek), obtained from the Ministry of Trade and Industry (MTI). The key informants were the SME owner-managers themselves, as it was the influence of their own education, experience and EO on their firms' strategic development

which was being studied.

Table 4.1. Summary of the variables, type of questions, purpose, and question numbers

Questions	Purpose, App ¹ and Question Number.
General information	
Name and location	<i>Names</i> App 1: Q1, Q2
Company size (number of employees)	<i>Size</i> App 1: Q3
Owner-manager's education, and experience in terms of number of years in the industry	<i>Education & Experience</i> App 1: Q4a, Q4b
Network development	
Number of partnerships formed with customers, contractors, suppliers, research centres, etc	<i>Formation</i> App 1: Q5a to Q5f
Analysing partnership objectives, developing relations & degree of discussions with partners	<i>Coordination</i> App 1: Co1, Co2, Co3
Ability to build relationships, degree of flexibility & problem-solving ability in dealing with partners	<i>Relationship Skills</i> App 1: RS1, RS2, RS3
Knowledge of partners' products, services, procedures, strengths and weaknesses	<i>Partner Knowledge</i> App 1: PK1, PK2, PK3
Frequency of meetings, informal employee contacts, feedback among managers & employees	<i>Internal Communication</i> App 1: IC1, IC2, IC3
Degree of openness to new relations with new partners, ability to initiate mutual relationships, and degree of prospecting for new partners	<i>Building</i> App1: B1, B2, B3
Entrepreneurial Orientation (EO)	
Emphasis on R&D, degree of changes or refinement of product lines in last few years	<i>Innovativeness</i> App 1: EO1-I to EO5-I
Attitude towards competitors (initiates actions & competitive posture), first-to-market or follower	<i>Proactiveness</i> App 1: EO6-P to EO8-P
Degree of risk (low vs. high) of projects, strategic posture (wait-and-see or bold and aggressive) and type of behaviour to achieve goals (cautious vs. bold)	<i>Risk-taking propensity</i> App1: EO9-R, EO10-R, EO11-R
Product and Market development	
Degree of product improvement relative to own performance and competitors' and degree of change (improvements or new-to-world products)	<i>Product development</i> App 1: PD1, PD2, PD3
Degree of new market exploration/creation relative to on performance and competitors and relative to own strategic goals	<i>Market development</i> App 1: MD1, MD2, MD3

The measurement instrument² was developed to assess

¹ "App" is used as an abbreviation for "Appendix" in table 4.1.

² In this study the terms measurement instrument, measuring instrument and questionnaire are used interchangeably.

the influence of SME owner-managers' education, experience and entrepreneurial orientation on their firms' strategic development. In order to ensure the validity and reliability of the measurement instrument, it was essential to accurately and clearly define the key variables. Entrepreneurial orientation was evaluated by the degree of: innovativeness, proactiveness and risk-taking propensity. Network development was measured by: number of partnerships formed, coordination, building, relationship skills, internal communication and partner knowledge. Product development was assessed by the degree of product improvement compared to own past performance and/or competitors' performance and degree of change (improvements or new-to-world products). Market development was measured by the number of new market explorations/creations compared to own past performance and competitors', and in relation to own strategic goals. Appropriate questions were formulated by the researcher (based on the literature) to ensure that each variable in the instrument was represented by at least three items. Refer to Table 4.1 for summary of variables, related questions and their purpose.

The measurement instrument used was adapted from previous studies and revised where necessary to ensure reliability and validity of the data.

4.1. Reliability and Validity in this Study

Cronbach's alpha coefficient was used as a measure of internal consistency-reliability of the scale used in this study. Cronbach's alpha is a measure of internal reliability for multi-item summated rating scales. Its values range between 0 and 1, where the higher the score, the more reliable the scale. Although Cronbach's alpha coefficient is a widely used as a measure of reliability, there is no fixed rule with regard to what score of reliability should be considered acceptable. Table 4.2 provides the reliability statistics of the scale used in this study.

Table 4.2. Reliability statistics

Construct	Cronbach's Alpha	N of Items
Product development	0.91	3
Market development	0.84	3
Coordination	0.90	3
Relationship skills	0.91	3
Partner knowledge	0.90	3
Internal communication	0.85	3
Building	0.71	3
Innovativeness	0.94	5
Proactiveness	0.84	3
Risk-taking	0.88	3
Entrepreneurial orientation	0.89	3
Network development	0.85	5

Nunnally (1978) recommended that the minimally acceptable reliability for exploratory research should be in the range of 0.5 to 0.6, while higher values, such as 0.8, generally indicate that the measure is highly reliable (Sekaran, 1992). For the value of alpha to be considered acceptable it has to be related to the purpose of the research: lower scores are acceptable for exploratory research, but even then these scores should be used only as an indication rather than a test of reliability (Hair *et al.* 2006).

Discriminant validity was then verified using Partial Least Squares (PLS) method. Table 4.3 provides the proportion of variance explained by latent variables.

The "cumulative X variance" is the percentage of variance in the X variable(s) accounted for by the latent factors. The "cumulative Y variance" is the percentage of variance in the Y variable(s) accounted for by the latent factors. Both are interpreted as cumulative R-square in regression. Note that a model may explain variance more in the X variables than the Y variables, more in the Y variables than the X variables, or equally (Dijkstra 1983, 1985).

If a factor explains more variations in the Y variables, then the factor is more powerful and apt to explain the variation in a new sample of dependent values. If a factor explains more variations of the X variables, then it better reflects the observed values of the set of independent variables.

Table 4.3. Proportion of Variance Explained

Latent Factors	Statistics				
	X Variance	Cumulative X Variance	Y Variance	Cumulative Y Variance (R-square)	Adjusted R-square
1	0.390	0.390	0.173	0.173	0.164
2	0.331	0.721	0.012	0.185	0.168
3	0.279	1.000	0.005	0.190	0.165

Table 4.3 shows that three latent variables explain 100% of the variance of X and 19% of Y, i.e. the factors are a good reflection of the observed values of the set of independent variables. This suggests keeping these three dimensions for the final solution which is presented in the Section 5, with detailed results on the multivariate relationships hypothesized by the research model.

5. Findings and Discussion of Results

The collected data were analysed using descriptive and inferential statistics.

5.1. Descriptive Statistics

A composite score was obtained for each constructs and dimension by totalling the individual scores of the relevant items and calculating the average. The descriptive statistics for the composite research variables are presented in table 5.1 for 100 SMEs in the sample.

Table 5.1. Descriptive statistics

	N	Minimum	Maximum	Mean	Average %	Std. Deviation
Education	100	1.000	6.000	3.390	56.50	1.262
Industrial experience	100	1.000	7.000	3.340	47.71	1.677
Network development:	100	3.733	7.000	5.861	83.73	0.719
Number of partnerships formed	100	2.000	32.000	11.030	-	6.370
Coordination	100	2.667	7.000	5.413	77.33	1.131
Relationship skills	100	3.000	7.000	5.667	80.95	0.996
Partner knowledge	100	3.000	7.000	5.907	84.38	0.976
Internal communication	100	4.000	7.000	6.317	90.24	0.792
Building	100	3.333	7.000	6.003	85.76	0.778
EO	100	4.000	7.000	6.136	87.66	0.741
Innovativeness	100	4.000	7.000	5.908	84.40	0.869
Proactiveness	100	4.000	7.000	6.123	87.48	0.842
Risk-taking	100	4.000	7.000	6.377	91.10	0.752
Product and Market dev.:						
Product development	100	1.667	3.000	2.527	84.22	0.419
Market development	100	2.000	3.000	2.653	88.44	0.429

n=100

Table 5.2. A summary of the Spearman correlation coefficients and p-values

Variable 1	Variable 2	Spearman correlation (ρ)	P-value
Education	Network development	0.396	<0.01
Education	Product development	0.111	0.272
Education	Market development	0.074	0.462
Experience	Network development	0.155	0.124
Experience	Product development	0.142	0.160
Experience	Market development	0.172	0.086
Entrepreneurial orientation	Network development	0.467	<0.01
Entrepreneurial orientation	Product development	0.319	<0.01
Entrepreneurial orientation	Market development	-0.001	0.996
Network development	Product development	0.146	0.148
Network development	Market development	0.120	0.234

n=100

5.2. Correlations

Spearman correlations were used to determine the influence of education and experience on strategic development; the relationship between EO and strategic development; and the influence of network development on product and market development.

A summary of Spearman correlation coefficients (ρ) and p-values for the different variables is provided in Table 5.2 below.

Table 5.2 shows statistically significant positive correlation between EO and network development ($\rho = 0.467$), and EO and product development ($\rho = 0.319$). Also, a

significant positive correlation was observed between education and network development ($\rho = 0.396$). Correlations between the other variables were not significant.

5.3. Partial Least Squares (PLS) Regression Analysis

Partial Least Squares (PLS) regression was used to test the multivariate relationships hypothesised by the research model. PLS method was preferred because it is more appropriate in the initial phase of developing hypotheses (Fornell & Bookstein, 1982).el. The research hypotheses are tested by gauging the path, strength and significance of the path coefficients assessed by Partial Least Squares (PLS), as

shown in Figure 5.1.

The first hypothesis, namely that there is a relationship between the education and experience of an SME owner-manager and strategic development of the SME, is confirmed for education and network development by significant path coefficients ($\gamma = 0.325$). However, there is no significant relationship between experience and strategic development.

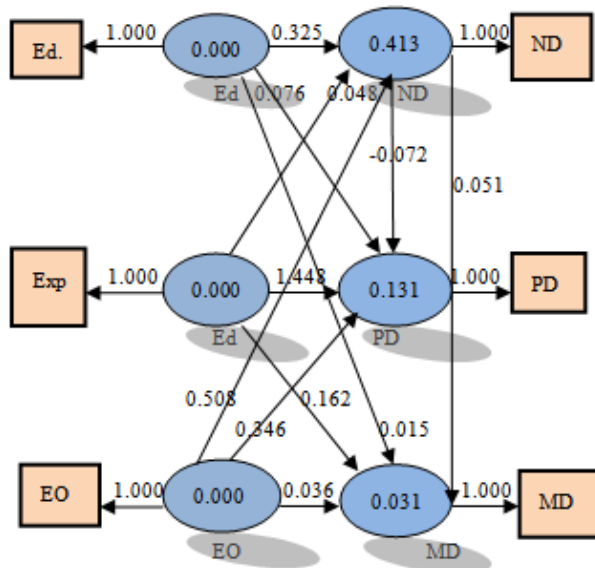


Figure 5.1. Test of the Research Model (PLS, n=100)

The hypothesis that there is a relationship between strategic development and an aggressive entrepreneurial orientation (EO) is confirmed by significant path coefficients for network development ($\gamma = 0.508$) and ($\gamma = 0.346$) for product development, and the bootstrap confidence intervals, as shown in Table 5.3.

For hypothesis H2, the results show that there is no significant relationship between the development of a manufacturing SME's networks and the development of its markets and the development of its products. This means that, for manufacturing SMEs in Namibia, product and market development takes place irrespective of their level of network development.

5.4. Bootstrap Confidence Intervals

The bootstrap aims to carry out familiar statistical calculations, such as standard errors, biases, confidence intervals among others, in an unfamiliar way: by purely computation means, rather than through the use of mathematical formulas. A comprehensive base of mathematical theory has grounded the development of bootstrap methods; however that is beyond the scope of this research. The bootstrap confidence intervals to determine the statistical significance for the paths and path coefficients in the PLS model are presented in Table 5.3. Efron and Tibshirani (1993) recommend that the bootstrap interval's lower and upper limits should not include 0.

Table 5.3. Bootstrap confidence intervals

Path	bootstrap lower	bootstrap mean	bootstrap upper
EO -> MD	-0.282	-0.034	0.21
EO -> ND	0.331	0.501	0.645
EO -> PD	0.119	0.347	0.578
ND -> MD	-0.212	0.050	0.301
ND -> PD	-0.347	-0.076	0.181
Ed. -> MD	-0.200	0.015	0.245
Ed. -> ND	0.176	0.322	0.458
Ed. -> PD	-0.117	0.076	0.282
Exp. -> MD	-0.041	0.161	0.356
Exp. -> ND	-0.103	0.052	0.217
Exp. -> PD	-0.045	0.151	0.331

6. Summary

This study contributes to supplementing the strategic development theory in developing country contexts, such as Namibia. The managerial value is found in the following points underpinned by the findings of this study.

The findings of this study underline the importance of entrepreneurial orientation and networking for strategic development of manufacturing SMEs. Owner-managers should therefore increase their efforts to develop their educational, entrepreneurial and networking capabilities, which will in turn play an important role in the strategic development.

Managerial interventions to improve levels of innovation, entrepreneurial behaviour and network development should focus on the following dimensions: innovativeness, proactiveness and risk-taking propensity (for EO); and coordination, relationship skills, partner knowledge, internal communication and building (for network development). These behavioural aspects can be measured and therefore can be managed. These interventions will equip SME owner-managers with the necessary skills to enhance strategic development of their firms.

Owner-managers, management consultants, SME development support organizations and other researchers should use the measurement instrument developed and verified in the study to measure these phenomena in the Namibian context. The questionnaire developed and used in this study was shown to be reliable. However, future research should refine the measurement. Improved measures and larger samples for verification could lead to better model specification.

7. Conclusions

With the arrival of international competition and new organisational forms operating in collaborative networks, the strategic development of small and medium enterprises is crucial to their continued existence, expansion and competitiveness. Known the shortage of empirical knowledge in this regard, this study has enriched the body of

knowledge in the field of strategic development in manufacturing SMEs, and of the determinants and effects of this development. It is known that SMEs are very supple and malleable to change. Some of these manufacturing SMEs are well-developed enterprises and, in the currently international trade atmosphere, others should do the same by embracing innovation and networking to develop their competitive situation. Unless strategic development is consistent with the competitive atmosphere, planned goals, and configuration of manufacturing SMEs, it cannot be fruitful. SMEs should therefore enhance their aptitude to direct their strategic development, and thus will necessitate unrelenting support from researchers and other support organizations.

8. Limitations of the Study and Opportunities for Future Research

Although the present study aimed at making a significant contribution to the body of knowledge on strategic development for SMEs, certain areas still need to be explored or expanded. Based on the outcome of this research, the following limitations are stated and opportunities for future research are outlined:

- Only manufacturing SMEs operating in Namibia were studied, and therefore the findings cannot be generalised to all sectors and firms operating in and/or outside Namibia. Future research should cover other sectors and firms.

- Using manufacturing SMEs operating only in one region of the country, namely Khomas region (Windhoek), as a sample might not yield an accurate representation of strategic development for manufacturing SMEs in the whole of Namibia. Future research should draw a sample from all the regions of Namibia.
- It would be useful to replicate this study in other emerging economies to verify to what extent owner-managers' education, experience and entrepreneurial orientation influence strategic development for manufacturing SMEs in these countries and explain the differences between these countries. It would be worth pursuing the question: to what extent does culture itself affect levels of entrepreneurial behaviour and strategic development within these countries?

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Appendix 1: Research Questionnaire

STRATEGIC DEVELOPMENT FOR MANUFACTURING SMEs IN NAMIBIA

The objective of this research is to enrich our knowledge of strategic development in manufacturing SMEs in Namibia, and to serve as a tool for policymakers and support organisations to design support programmes and initiatives of innovation for SMEs that widen key concepts, such as entrepreneurship, learning and market orientation. Your responses will be treated as confidential and the information will not be used for commercial purposes.

GENERAL INFORMATION

Q1. Name of Organization: -----

Q2. Location (Town): -----

Q3. Number of employees: -----

Q4a. Owner-manager's highest level of education (choose one):

1.Primary school	2.High school	3.Vocational training	4.College	5.University	6. Other: specify

Q4b. Owner-manager's industry experience (number of years in the industry): -----

Q5. How many partnerships have you formed with the following?

Q5a	Prime contractors	
Q5b	Customers	
Q5c	Suppliers	
Q5d	Competitors	
Q5e	Research centres, colleges and universities	
Q5f	Other SMEs	

Please rate your agreement (7) or disagreement (1) with the following statements:

We are interested in learning about how you think about your businesses' strategy and how you see your partners (prime contractors, customers, suppliers, competitors, bank and other partners). If you strongly agree, answer "7", if you strongly disagree, answer "1". There are no right or wrong answers to these questions, so please be as honest and thoughtful as possible in your responses. All responses will be kept strictly confidential.

1-Strongly disagree; 2-Disagree; 3-Disagree to some extent; 4-Undecided; 5 – Agree to some extent; 6 – Agree; 7 –Strongly Agree

In my / our business:		1	2	3	4	5	6	7
Co1	We analyse what we would like and want to achieve with each partner.							
Co2	We develop relations with each partner based on what they can contribute.							
Co3	We discuss regularly with our partners how we can support each other.							
RS1	We have the ability to build good personal relationships with our business partners.							
RS2	We can deal flexibly with our partners.							
RS3	We almost always solve problems constructively with our partners.							
1-Strongly disagree; 2-Disagree; 3-Disagree to some extent; 4-Undecided; 5 – Agree to some extent; 6 – Agree; 7 –Strongly Agree		1	2	3	4	5	6	7
PK1	We know our partners' markets.							
PK2	We know our partners' products / procedures / services.							
PK3	We know our partners' strengths and weaknesses.							
IC1	We have regular meetings for every project.							
IC2	Employees develop informal contacts among themselves.							
IC3	Managers and employees often give feedback to each other.							
B1	We are constantly open to new relations with new partners							
B2	We have the ability to initiate a mutual relationship with new partners							
B3	We have our eyes open to find new partners							
EO1-I	I/we constantly explore the development of new business ideas (new packaging and new products).							
EO2-I	In the last few years changes in our products/services have been quite significant.							
EO3-I	Our business is innovative in the way it markets its products/services							
EO4-I	We constantly refine and develop existing products/packages.							
EO5-I	In the last few years, our business has added very many new features to our products/services.							
EO6-P	In dealing with competitors, we are very often the first to introduce new product/service/packages and ways of marketing.							
EO7-P	It is our philosophy to win at all costs and if competitors need to be eliminated in the process, it must be done.							
EO8-P	We prefer to think about opportunities that can still arise and develop products/services and not to react to competitor offerings.							
EO9-R	I/we prefer to get involved in projects with a high-risk, high-return value proposition.							
EO10-R	I/we believe that we should achieve our goals by courageous, wide-ranging acts, due to changes in the environment.							
EO11-R	We are prepared to take chances that other businesses are afraid to take to achieve our goals.							

		Significantly Less			Same		Significantly More	
		1	2	3	4	5	6	7
PD1	How many new products or product improvements did you introduce during the past two years in comparison to the last five years?							
PD2	How does the number of new product introductions at your company measure up to those of your major competitors?							
PD3	To what degree did these new product include products that did not previously exist in your markets (*new in Namibia)?							
MD1	How many new markets did you explore/create during the past two years in comparison to the last five years?							
MD2	How did these new markets for your company measure up to those of your major competitors?							
MD3	How did these new markets match up to your strategic goals?							

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