

Collaborating to compete: The role of collective creativity in a South African clothing design small business



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Background: The number of apparel manufacturers in the South African clothing and textile industry is diminishing due to competition with importing apparel manufacturers. Nevertheless, South African small and micro-businesses still manufacture clothing products to meet the needs of the local markets.

Aim: This study set out to explore and describe the role of collective creativity in the design process of a South African clothing small business that provides innovative clothing to local niche markets.

Setting: The small and micro-businesses are typically owned by designers who can be viewed as artisan entrepreneurs. However, the competition for the local market is very competitive, and innovative designs and design processes can promote the competitiveness of the clothing small and micro-businesses.

Method: A case study research design was implemented in the study, which included qualitative research methods. Semi-structured interviews, participant observation and analysis of the products against an innovation design framework were done.

Results: The findings suggest that a collaborative design process supports the collective creativity of the particular owner-designers. Collective creativity enables innovative clothing products that result from the design process and it also reduced the perceived risk that the owner-designers experienced with regard to launching a ready-to-wear range.

Conclusion: It is argued that collective creativity contributes to sustaining innovative design and enhances abductive reasoning for problem solving. Abductive reasoning, which is typically associated with design thinking, could be important for entrepreneurial thinking and recommendations in this regard are made.

Introduction

Background

The decline of the South African clothing manufacturing sector is viewed as a crisis, because the local textile industry cannot keep up with the competition from Chinese imported apparel. This is due to local issues such as high labour costs, low productivity, slow turnaround time and a weak value chain (Dhliwayo 2012). As a result, it was determined in 2013 that the clothing and textile industry in South Africa shed approximately 50% of its jobs (Natrass & Seekings 2014). This has created a situation where skilled machinists and pattern-makers have been forced to either work for small and micro-businesses that provide clothing to local clientele or to alternatively start micro- or small business enterprises.

Many of these clothing small and micro-businesses are less sophisticated cut, measure and trim businesses (Vlok 2006) that manufacture clothing by means of designing and constructing garments from concept to customer. Although no specific statistical evidence was available to indicate how many South African small and micro-businesses manufacture clothing for customers, it is apparent that at least 129 active apparel design small and micro-businesses were operating in the Tshwane region of the Gauteng Province between 2011 and 2013 (Tselepis 2013). Most of these businesses manufacture customised clothing for their individual customers and refer to themselves as clothing designers, irrespective of whether they have formal training in clothing design. Business owner-designers of this nature can be viewed as artisan entrepreneurs (Cyr, Meier & Pacitto 2011).

Many of the local artisan clothing entrepreneurs create individual and exclusive apparel for the local market, and therefore apply a business-to-customer trade model (Lemke, Clark & Wilson 2011). This model includes the trading of custom-designed clothing for private clients from a design studio or trading designer's clothing lines from exclusive retail stores to the target consumer. Clothing designers commonly implement this model to manufacture the so-called 'couture' wear, which implies that it is made-to-measure high-end clothing (Bickle 2011:57). Although these clothing small and micro-business owner-designers may survive by producing for local niche markets, a potential problem these owner-designers might face in the long run is competition with other local clothing designers who offer similar products – in addition to the competition with clothing imports. The importance of business differentiation strategies through producing innovative clothing or applying innovative processes can potentially enhance the competitiveness of businesses.

The prolonged production of innovative designs as an individual can present challenges to designers who do not embrace the creative contributions of others during the design process (Gong *et al.* 2013). Collaboration may enhance opportunities to be innovative in a business (Hartley, Sørensen & Torfing 2013). The inquiry presented in this study investigates the role that collective creativity plays in creating and sustaining a competitive advantage in the context of clothing product design of a specific clothing design small business that implements a collaborative design process.

Firstly, this study presents a review of the literature that supports the concepts relevant to the inquiry. A description of the research methodology follows, and the qualitative empirical findings are presented. After a discussion on the findings, this work concludes with implications for owner-designers of local clothing design small or micro-businesses.

Literature review

Design practice and thinking

In general, design (as a practice) is defined as a process that requires thinking and actions to combine elements or components into a cohesive whole, in a creative manner, to change an existing situation into a preferred one (Boztepe 2007:62). Rath *et al.* (2008:5) state that design entails a great deal of pre-production planning before implementation (production) takes place. Design is often viewed only as a conceptual process (Chan *et al.* 2011). Aspelund's (2010:5) definition is applicable to apparel design in particular: 'Design is about ideas: needing and finding ideas, examining and identifying their nature, and, most important, illustrating and explaining them so they can be realised'. Therefore, design entails that a plan of action is implemented during a design process to solve a design problem (Goldschmidt & Sever 2011).

From an entrepreneurial perspective, designing a product should not only involve the conceptual thinking related to the design process but also involve thinking that aims to add

value to an intended market so that the business can thrive in the long run (Hobday, Boddington & Grantham 2012). A conceptual or cognitive process (thinking) that designers implement relates to entrepreneurial thinking (Neck & Greene 2011). More specifically, creativity and innovation applied to value creation and solving complex problems are two skills that designers and entrepreneurs share (Schmidt, Soper and Bernaciak 2012). Olsen (2015:182) signifies the latter through a perspective on the scientific origin of design thinking from a reflection on the work of John Dewey (1934) on art experience where the process commences with inquiry into an existing problem or problem situation. Goel and Shu (2015) add to the body of knowledge by encapsulating analogy as a cognitively embedded requirement for creative design thinking. Included in analogical design is domain-based design. In the context of this study, it involves the overlapping and integrated role of the designer in the entrepreneurial domain. The analogy of designing for a market reflects accordingly. Menon (2015) posits the structured nature of design and design thinking and refers to the entrepreneurial opportunity-finding process as an amalgamated element of the structured view. Therefore, it can be argued that one of the parallels between pure designers and entrepreneurs is solving problems through the application of design thinking and adding value as a result of the application of creativity.

Creativity

Olim, Mota and Silva (2015:205) quote the seminal work of *The rise of the creative class* (2002) by Richard Florida in emphasising the appreciation and significance of 'creative people, creative industries and creative economies'. The authors found that creativity in entrepreneurial new business formation was critical in modern business environments. For the purpose of this study, creativity is defined from a cognitive perspective and specifically with reference to problem solving. Creativity is at the heart of the entrepreneurial thought processes (Puhakka 2012). The scope of creativity in this study is thus associated with the design process, as well as the owner-designer's ability to create value for markets within an entrepreneurial context.

Creativity and the designer

From a design perspective, creativity is especially important to analyse and synthesise several ideas (Cennamo *et al.* 2012). Brannon (2007:68) argues that synthesis is a 'creative reintegration' of several ideas or elements. An evaluation of each idea can be done to refine new emerging ideas, while reflecting on other ideas to redefine them until the ultimate product-concept is finally defined (Regan, Kincade & Sheldon 1998). The designer's creativity should be applied to come up with feasible ideas that can provide solutions to the design problem (Tumasjan & Braun 2012). Creative thinking skills enable the designer to evaluate ideas regarding the design problem against possible constraints (Mumford *et al.* 2010). Therefore, evaluation can be viewed as a designer's ability to critically think about potential solutions to design problems.

Critical thinking skills associated with creativity include problem definition, conceptual combination and idea generation (Mumford *et al.* 2010). Not all the ideas on the components or materials are necessarily suitable for a specific clothing product (Regan *et al.* 1998), which is why a synthesis of several ideas takes place during the design process (Aspelund 2010:79; Lamb & Kallal 1992; Regan *et al.* 1998). One can argue that these ideas can revolve around the synthesis of client needs and input materials, or the synthesis of client preferences and materials, but the synthesis of ideas should be done in a creative manner so that the product that is eventually created is innovative. Nagai and Junaidy (2015:53) conclude with reference to the sense of design (Csikszentmihalyi & Robinson 1990; Taura & Nagai 2013) within a broader entrepreneurial context:

A sense of design is a crucial point in considering the rationale of design, particularly creative design, which epitomizes the higher values of society and defines the direction for future generations.

Creativity and the entrepreneur

The creativity trait serves as an entrepreneurial facilitator in primarily the problem identification and solution-finding process towards exploiting opportunities in the market (Moroz & Hindle 2012). Blauth, Mauer and Brettel (2014:496) add, contextually, that creativity per definition derived from the related body of knowledge suggests *firstly* the newness of the solution to an aligned problem, and *secondly*, the 'appropriateness' of the solution, given market need. The authors further explain that creativity is directly linked to the creation of opportunities, rather than the 'observation' thereof, in quoting Read and Sarasvathy (2005). Scholars in the domain adopted a cognitive perspective with regard to creativity and problem solving (Mitchell *et al.* 2007; Tumasjan & Braun 2012). Accordingly, creativity in the entrepreneurial sense also involves the cognitive constructivism of ideas (Puhakka 2012).

Chell (2007) views cognitive constructivism as the process where, for example, an entrepreneur not only applies existing knowledge structures but also mentally constructs his/her world using categories. Puhakka (2012) describes this process as a conceptualisation process, enabling the entrepreneur to restructure his/her knowledge. With regard to problem solving, the main application of these cognitive processes (problem solving and cognitive constructivism) in a business environment is to find or even create business opportunities (Matthews 2010).

Business opportunities can be identified or created to grow existing businesses (Casson & Wadson 2007). In this study, the authors embrace the idea that the owner-designers of the small and micro-businesses who offer clothing to local niche markets might be able to identify new and/or grow existing business opportunities through clothing product design. Therefore, thinking like a designer on a cognitive level may enhance the owner's ability to capitalise on product design. Thinking like a designer can involve three types of logic when problems are solved or solutions are discovered:

deductive logics, inductive logics and abductive logics (Kimbell 2011; Kolko 2010). Deductive logics involves a process of reasoning from general principles and facts to new facts with certainty, whereas inductive logics involves reasoning from specific facts to general facts. Abduction is the act of process reasoning from general principles and facts to new facts under uncertainty (Kimbell 2011). Mirza *et al.* (2014:1981) exemplify the role of abductive reasoning in enhanced to complex problem situations to be solved through high levels of creative endeavour, experience and knowledge. The integration with the entrepreneurial domain serves relevance in this regard. Abduction can be associated with entrepreneurial thinking, because entrepreneurs often do not have certainty about proposed innovative solutions to problems. Rennemo and Åsvoll (2014:167) accurately accentuate the role of creativity in entrepreneurial opportunity-finding by echoing the seminal work of Peirce (1960) on abduction: '... it is the idea of putting together what we had never before dreamed of putting together which flashes the new suggestion before our contemplation'.

In this regard, the owner-designer's creativity, as well as employees' creativity, can potentially relate to entrepreneurial actions and is considered important for gaining a competitive, advantage especially with regard to innovation. Nevertheless, the specific dimension of the collaborative design that can possibly clarify the reason for innovation is referred to as collective creativity (Tadmor *et al.* 2012).

Collective creativity

Collective creativity is a phenomenon that has been researched with regard to ideation and has proven to be beneficial (Tadmor *et al.* 2012). It mainly manifests itself during creative problem solving (Shiu, Chien & Chang 2011; Steiner 2009). Hargadon and Bechky (2006:489) summarise this phenomenon by stating that 'collective creativity happens when social interactions between individuals trigger new interpretations and new discoveries of distant analogies that the individuals involved, thinking alone, could not have generated'. To summarise the core construct, Table 1 adapted from Parjanen (2012:113) is added that provides the key theoretical flow in research towards deeper understanding.

Further to the table, collective thinking involves the thinking pattern of several designers, but the condition for creativity is that all the group members of this process should be fully engaged (mindful) and that all the members of the group participate (Hargadon & Bechky 2006). In an empirical attempt and from an organisational perspective, Bissola and Imperatori (2011:77) frame collective creativity as a combination of 'individual traits, interpersonal relationships and organisational practices, which lead to a collective creative performance'. From another angle, cultural diversity in groups was found as a positive ingredient in collective creativity application, proposed by Tadmor *et al.* (2012). Given the context, collective thinking can also take place between entrepreneurs and is often applied in incubation

TABLE 1: Literature on collective creativity.

Study	Data	Results
Woodman, Sawyer and Griffin (1993)	Theoretical analysis	Full understanding of creativity in complex social settings requires going beyond a focus on individual actors and examining the situational context within which the creative process takes place. A variety of social and contextual influences affect creativity at the group and organisational levels. Many of these influences either constrain or enhance the creative performance of individuals and groups.
Oldham and Cummings (1996)	The research was conducted in two manufacturing facilities that produced component parts for technical equipment (171 employees)	According to the results, employees produced the most creative work when they had appropriate creative-relevant characteristics, worked on complex, challenging jobs and were supervised in a supportive, non-controlling fashion.
Drazin, Glynn and Kazanjian (1999)	Theoretical analysis	Authors' proposal sustains the relevance of continuous interaction processes in creativity aimed at establishing the common patterns of reference and shared meanings necessary to overcome moments of crisis in collective actions.
Bharadwaj and Menon (2000)	Data were gathered through a mail survey of key respondents in 750 business units of 500 corporations	The study finds that organisational creativity mechanism and individual creativity mechanism can lead to innovation in companies. The study suggests that high levels of organisational creativity mechanism led to significantly superior innovation performance than low levels of organisational and individual creativity mechanism.
Taggar (2002)	The performance of 94 groups on 13 different open-ended tasks was studied	The study shows that although it is necessary for a group to contain members who are creative, team creativity-relevant processes that emerge as part of group interaction are also important. Indeed, without this latter type of behaviour, the benefits of putting together a group of highly creative individuals are neutralised.
Hargadon and Bechky (2006)	The model is grounded in observations, interviews, informal conversations and archival data gathered in intensive field studies of work in professional service firms	The study confirms the relevance of investigating the processes that lead to significant and valuable collective creative results and demonstrates that four sets of interrelating activities foster collective creativity (help seeking, help giving, reflective reframing and reinforcing).
Bissola and Imperatori (2011)	A grounded research design through six focus groups attended by 24 managers from 17 Italian fashion and design firms and 12 academics	The results confirm that creativity is not only about creative genius, and designing potential for creativity is not a matter of linear correlation but includes a more sophisticated and integrative approach according to which individual creative skills, team dynamics and organisational solutions interact with each other to produce a collective creative performance.

Source: Adapted from Parjanen, S., 2012, 'Experiencing creativity in the organization: From individual creativity to collective creativity', *Interdisciplinary Journal of Information, Knowledge, and Management* 7, 113.

environments (Bruneel *et al.* 2012). The advantages of collective creativity relate to the innovative ideas on processes and products as outputs of processes (Jennings 2011:115; Oddane 2015; Steiner 2009).

In their study on collective creativity, Tadmor *et al.* (2012) asserted that creative minds that collaborate enhance novelty, fluency and flexibility, especially as outcomes of an ideation phase. Hargadon and Bechky (2006) emphasise the importance of a qualitative approach to the creative process and identify four interrelating activities that take place during the collective creativity process when innovative products are created: (1) help seeking, (2) help giving, (3) reflective reframing and (4) reinforcing. According to these scholars, help seeking involves an individual in a group seeking help from others, help giving entails that there is a willing devotion of time and attention to assist a group member, reflective reframing involves the mindful behaviour of all participants in a group interaction and finally reinforcing involves any interesting solutions the group might find. In view of these actions, interaction is all about pooling resources, ideas and people. With this in mind, the theory of Hargadon and Bechky (2006) can be applicable to collaborative design as applied to create innovative products and/or offerings or processes that could, in turn, enhance the business's competitiveness.

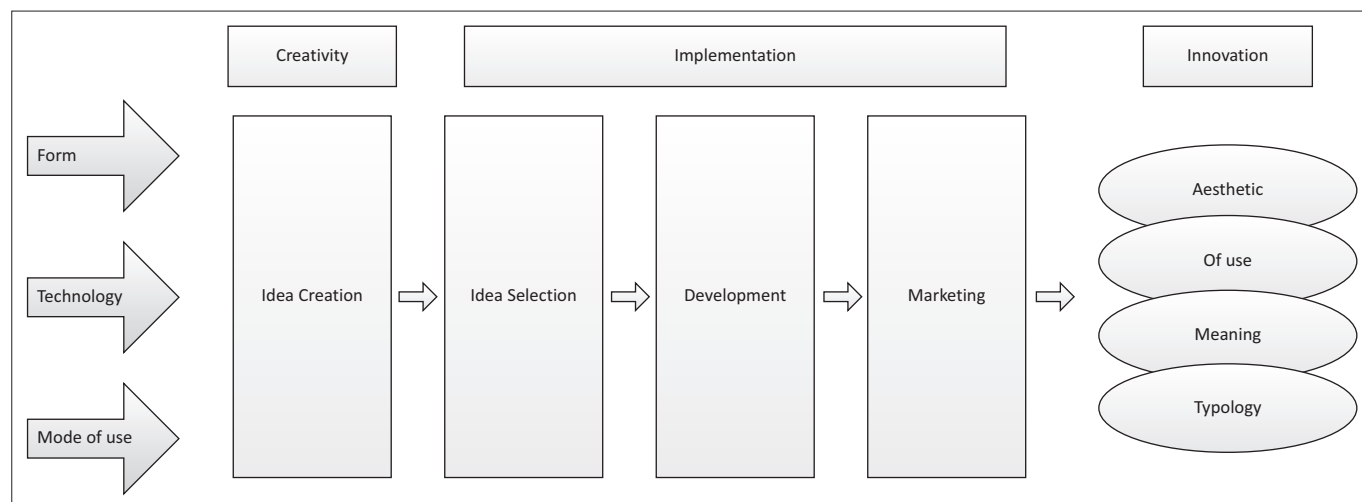
Innovative products or processes to yield a competitive advantage

Innovative products (including services) can be defined as products that are novel or improved (Tung 2012), and innovative processes in a business can improve productivity or even the efficiency of business activities (Sawhney, Wolcott & Arroniz 2011). The outcome of innovative product creation

should be reviewed within the entrepreneurial context. Autio *et al.* (2014:1103) highlight the importance of 'contextual interactions' within the entrepreneurial ecosystem that drives innovation. They suggest that research should support the deeper understanding of entrepreneurial innovation in different contextual settings. Garud, Gehman and Giuliani (2014:1179) support the latter by affirming that contexts 'shape not only the opportunities that are available, but also the dynamics that unfold'. Hence, the lens of design in this study. Berends *et al.* (2014) integrate causal and effectuation as key drivers of product innovation. This signifies that the contextual differences in a small business as compared to the big, are relevant to the frame of this study.

Given the process context, when the purpose of innovation through the design process is to add value to a specific market, the design process that yields the innovation is usually user-centred (Schreier, Fuchs & Dahl 2012). A user-centred approach to innovative products is applicable to the context of this study, which implies that the products that are innovative are designed to meet the needs of specific clients (Balka, Raasch & Herstatt 2014; Chandra & Leenders 2014; Gambardella, Raasch & Von Hippel 2014; Shearmur & Doloreux 2015; Theodorakopoulos *et al.* 2014).

In this regard, the theoretical framework of Rampino (2011) on product innovation was used to underpin the inquiry in this study. The author upholds that product innovation through design has three possible starting points, namely form, mode of use and technology. The innovation framework supports the notion that innovative products can result from the design process with different dimensions, which are an aesthetic dimension, a use dimension, a meaning dimension or a typological dimension. Figure 1 schematically illustrates this innovation framework.



Source: Rampino, L., 2011, 'The innovation pyramid: A categorization of the innovation phenomenon in the product-design field', *International Journal of Design* 5(1), 11.

FIGURE 1: Design innovation framework.

From Figure 1, it is apparent that creativity is applied to a product design process. The product (in this study a clothing product) may have undergone aesthetic innovation (e.g. having a different or unique appearance), can be used for a purpose less traditional (e.g. having multiple purposes or being used in an unconventional manner) and carry a meaning that is creative (e.g. portraying a specific image that is unconventional). Due to the fact that typological innovation usually requires high technology and is associated with radical innovation rather than a user-centred approach (Verganti 2013:10), it is excluded from this literature review. It is important to note that the application of creativity during a design process yields an innovative product, but in addition, it is argued that the actual design process may also be innovative. In this regard, collective creativity applied to designing a clothing product to enhance novelty, fluency and flexibility of designers might be viewed as process innovation.

Research methodology

The research question addressed in this study is: How does collective creativity contribute to a South African clothing design small business's competitiveness?

The specific objectives addressed in this study to answer the research question are as follows:

- To explore and describe the role of collective creativity in the collaborative design process of a South African clothing design small business (in order to determine the relevance for the business's competitiveness).
- To explore and describe the role of collective creativity in the product that results from the design process (in order to determine the relevance for possible product innovation as a competitive business strategy).

Research design

The research design adopted in this study was a case study. The researchers were interested in understanding events,

actions and processes in their context, which is referred to as contextual interest (Babbie & Mouton 2001:272; Denscombe 2008:35). A list of various cases was compiled, from which the particular case was selected. The list contained information on the names and operations of 129 clothing design businesses in Pretoria, which were acquired through research on the Internet (websites, social media pages, blogs) and through telephone books and popular magazines (which are available to the public and in which the small businesses advertise), as well as information from fabric stores in the geographical area (recommendations and business cards).

The case selected for this study was a clothing design small business in Pretoria, which was identified as an extreme case when compared to other clothing design small businesses in this region. An extreme case is a case selected to represent exceptional aspects not observable in the typical cases (Denscombe 2008:35). The extreme case discussed in this study was regarded as competitive in the marketplace and had the following attributes:

- Has been operating for more than 5 years
- Provides designer clothing to local niche markets
- Owner is also the main designer
- Employs 10 people
- Is prominent in the media, especially with regard to differentiation
- Has more than one branch (Pretoria and Johannesburg)

Research methods

Multiple research methods were implemented to acquire rigorous data. The methods applied were semi-structured interviews, participant observations and an analysis of garments designed and manufactured in the business. Multiple methods are commonly implemented in a case study research design and can be applied in order to validate findings (Babbie & Mouton 2001:282; De Vos *et al.* 2011:321; Leedy & Ormrod 2005:135).

Unit of analysis

The unit of analysis in a study can be the object, phenomenon, entity or process of events that the researcher is investigating (Babbie & Mouton 2001:84). Merriam (2009:41–42) points out that it is especially the unit of analysis of a case study that needs special consideration when cases are selected. In this particular study, the phenomenon ‘collective creativity’ was investigated, which included the design process (including the behaviour of the owner-designers) and the clothing products resulting from the design process.

Data processing

Interviews were recorded and transcribed. Transcriptions of the interviews were completed after each interview, so that the researcher could start to organise the data before conducting the next interview. Transcriptions were done in the naturalised manner, which entails that the respondent’s words are transcribed verbatim, as well as other details (including voice tone, laughter and other aspects) (Oliver, Serovich & Mason 2005).

A product analysis was done of the garments that were designed. This analysis was based on the criteria and questions recommended by Rampino (2011) to explore possible innovation. The specific dimensions were aesthetics, use of the product and meaning of the product.

Participant observation was also undertaken. Records of designer–client interactions, as well as events, behaviour or gestures that were significant to the researcher at that particular time, were documented throughout the study. Other raw reflective notes made in the field were later converted to detailed filed notes, as advised by Babbie and Mouton (2001:107).

Data analysis

Content analysis is seen as the analysis and interpretation of the content and follows the process of establishing categories (Schreier 2012:1). The researcher’s practical strategy to analyse data within the framework of the relevant guidelines for qualitative data analysis proposed by Leedy and Ormrod (2005:136) involved the following steps:

- All information from transcriptions, observation notes and field notes on the case was processed in tables (phrase by phrase).
- The interview schedule was used to create initial categories in tables.
- All the data sources were read repeatedly in order to make sense of the patterns and themes that emerged (Merriam 2009:175). Categories, subcategories and units of meaning were created as they emerged from the data.
- All constructs and/or concepts were verified by literature.
- A conceptual framework for the case was compiled to show the relationships between possible constructs that emerged from categories, subcategories and units of meaning.

Assuring the quality of the data

The quality of the data in this study was assured through the application of strategies that combated errors pertaining to credibility, transferability and dependability.

Credibility

Credibility was important in this study, as the data had to ‘ring true’. Therefore, techniques suggested by Babbie and Mouton (2001:277) were implemented to acquire credible data. Prolonged engagement was one technique used to assure credibility (the researcher stayed in the field until data saturation occurred), as well as persistent observation (looking for multiple influences), peer debriefing (with experts outside the context of the study) and member checks.

Transferability

Transferability can be viewed as the extent to which data can be transferred to other similar situations (Babbie & Mouton 2001:277). For this study, data were reported in the context that they were collected, with details about the case being recorded and documented. Furthermore, transcriptions and field notes on the observations were reported to put all the data in context.

Dependability

Dependability pertains to the similarity of results that will be found if the research should be repeated with similar participants (Babbie & Mouton 2001:278). Strategies to ensure dependability suggested by De Vos *et al.* (2011:420–421) were thus implemented.

One strategy to ensure dependability is sufficient record-keeping (e.g. taking notes during interviews, observation and informal discussions). Transcriptions of all interviews, field notes and the evidence of the data analysis were kept.

Limitations of the study

This study was underpinned by the logics of validation, as opposed to generalisation. This implies that the study offers a contextual view of how collective creativity contributes to the competitiveness of the business through a collaborative design process. The role of collective creativity in other business functions are not presented in this study. Therefore, further investigation is needed to test how the findings in this study can be generalised to other similar artisan entrepreneurial contexts and how collective creativity enhances business functions other than operations.

Research findings and discussion

This section presents the findings of the study, organised according to the research objectives. The research findings are discussed throughout this section as they relate to the empirical evidence that is presented.

Objective 1

The role of collective creativity in a collaborative design process.

The collaborative design process of this case is described from the perspective of the empirical observations.

The plain garments with A-line silhouettes referred to as 'canvasses' are displayed on fit mannequins and all the designers comment on what the dress 'needs' or what is working or not 'working'. Music is playing in the large open design area where the clients also try on the garments. A clear design concept is not finalised when the designers complete the garments (implementation phase of the design process). Instead, all the designers work in the open studio, simultaneously, commenting on each other's work as basic garments are transformed into more exclusive and creative garments. The clients who walk in also get to see the creative process in action. With the dress on a figure form, owner-designer 2 starts to add draping and lace detail until the look he wants and the look the other two designers approve is obtained. He sews the added pieces by hand and often recreates his initial idea. He is working at creating a dress and drapes fabric in an artistic manner over the dress. He frequently steps back to appraise the garment from a distance. Owner-designer 1 also steps back and comments on the length of the fabric that is different on the one side and owner-designer 2 fixes this. He works with precision to please designer 1, but also talks about what the client would like with regard to her personality. She is apparently less dramatic and more romantic. Owner-designer 3 adds some advice on colour combinations to enhance a part of the garment. The garment is transformed from an A-line plain garment to an exclusive gown with a different silhouette and different theme than the initial garment.

The above observations confirm that help seeking, help giving as well as reflective reframing, as Hargadon and Bechky (2006) suggest, take place during the collaborative design process in a creative environment, and therefore the collective creativity of the designers is observable in their behaviour. Moreover, the inputs from clients confirm the user-centred design process and could be viewed as strategies to enhance the collective creativity of the designers. It is important to note that the creativity of all three the owner-designers are applied to solve a design problem, and this has specific advantages from a designer's point of view.

Advantages of collective creativity during the design process from the designers' point of view

During interviews with the designers, the advantages of collective creativity from the designer's point of view are confirmed. The advantages seem to link to the problem solving process of the designers in order to evaluate ('see') their ideas and work so that complex design problems can be solved:

'I don't understand how designers can work on their own. It is really important that they [pointing to other designers] also see.' [Participant 2, male, designer, 30 years]

'... the designs evolve as we go on. You'll have the fabric and then add something here and we add other stuff. It is done on the dress. It is different than what we started with, but it is always an improvement.' [Participant 1, male, designer, 49 years]

The above statement also points to the advantages of collective creativity with regard to problem solving through design thinking, and more specifically, with regard to solving complex design problems. Solving complex problems from a design perspective, as explained by Kimbell (2011), can involve different forms of reasoning: deductive reasoning (solving a problem by deducting information from a lot of information to apply to the specific), inductive reasoning (solving a problem with specific information and trying to apply it to a more general context) and finally abductive reasoning (which involves not having all the information at hand and still making design decisions to solve a design problem at hand).

Abductive reasoning, in particular, seems to be applicable in this case, where the designers have the technical skills (know-how), they know for who they design (the client), but they do not know what exactly the product should be. In this regard, drawing from each other's experiences and creativity can help the designer to solve the complex problem. Abductive reasoning relates to calculated risk-taking, which is typically associated with entrepreneurial thinking (Kolko 2010) and may enhance the business's competitiveness if the risk turns out to be worthwhile in monetary terms.

The following statement of the main designer confirms how the collective creativity of the design team impacts positively on the business's competitiveness:

'I think we have accomplished what we have because we are a team. Because the entire time we have a dress on a doll we walk past and this one will comment. I feel comfortable to ask designer 3 and designer 2 what they think of this. They also know what will sell and what is a bit too way-out.' [Participant 1, male, designer, 49 years]

Participant 3, who is the most inexperienced business owner of this small business, confirms from her point of view how the skills of the other designers contribute to her designs and ability to apply abductive reasoning:

'Designer 2 and designer 1 are both very creative people. Designer 2 is more a creative person. Designer 1 is technically good and he helps me to cost my stuff so that we make the profit without pricing ourselves out of the market'. [Participant 3, female, designer, 25 years]

More advantages of collective creativity from a business owner's perspective could be derived from the interviews.

Advantages of collective creativity from a business owner's point of view

Statements from the participants in this study illustrate how the collective creativity employed during the design process can have advantages for the business's overall competitiveness in the sense that it aids as a process that can be used to overcome challenges of productivity, and consequently could save money:

'I think our biggest restriction also, after time, is money ... when we think up the designs and not necessarily the drawing of the pattern, all three of us would sit together, brainstorm and decide

where we are going ... It saves me time and money to get advice from designer 1 and designer 2.' [Participant 3, female, designer, 25 years]

In addition to overcoming challenges relating to time and money, the collective creativity seems to lower the perceived risk of launching a ready-to-wear clothing line (in addition to producing clothing on order). The particular case launched a ready-to-wear range that is distributed through local boutiques. Participant 3 explains the reasoning behind starting a ready-to-wear range as a strategy to be more sustainable:

'... so it is quite hectic because for six months you struggle to survive with regard to finances and then for the next six months you struggle to survive with regard to time and sleep and getting work done. It is a lot of hours and that is the main reason why we are trying to bring the ready-to-wear range in ... so that we can take in a limited amount of couture, live out our creativity in that and then survive on the ready-to-wear range. The other two help me with this, because they know what will work for the customers of the boutiques.' [Participant 3, female, designer, 25 years]

Objective 2

The role of collective creativity with regard to product, resulting from the design process.

The product innovation framework of Rampino (2011) was used to guide the categories of the clothing product analysis, as well as categories of the participants' viewpoints on the role of collective creativity when creating innovative products. Table 2 includes the statements of participants, as well as the researcher's analysis of the clothing products designed by the owner-designers of the particular case.

Products were also perceived as competitive from the perspective of the designers as business owners. The following statement by Participant 1 confirms that innovative products are a strategy to stay competitive in the marketplace:

'And you can have a look if we [this business] does this, this year they do that the next year. This year we have to get to something totally new. I will tell you now others will do it the year after. It is difficult and it is hard work to get to something that no one

thought of. A dress has to be redesigned so that it is different.' [Participant 1, male, designer, 49 years]

Conclusions and implications for local clothing design small businesses

From the findings presented in this study, it is apparent that design strategy and thinking – specifically with regard to solving complex design problems and the competitiveness of the small business – are interrelated in the context of artisan entrepreneurship.

Collaboration enhances the collective creativity of the designers and can also lower the risks that designers take as owners of their businesses. Collective creativity simply implies that a few designers can each bring their own ideas, experience and skills into a collaborative design process. If all the designers are mindfully engaged in the process, one designer can literally influence the next designer's ideas by contributing during the interaction. New meanings to an individual's actions are ascribed to the contribution of another. It seems that the unified ideas of the designers in this study enable them to produce clothing products that also satisfy the needs of a particular niche market. In this regard, designers as owners of businesses can draw from each other's business owner experiences.

Furthermore, collective creativity seems to contribute to the innovation of products, as well as the actual design process. The collective creativity enhances novelty, fluency and flexibility during the design process, as Tadmor *et al.* (2012) suggest. Moreover, the sustainability of the innovative ideas is more probable when designers collaborate during the design process. In this regard, it is important to note that collective creativity applied to the design process cannot be viewed separately from the design business's competitiveness.

Therefore, collective creativity has several benefits for designers as owners of a business in a highly competitive clothing industry. The designers inspire each other by making contributions during the design process. Moreover, help seeking, help giving, reflective reframing and reinforcing can

TABLE 2: Product innovation resulting from collective creativity.

Category of innovation	Researcher's analysis of clothing products	Participants' statements relating to the category
Aesthetics of clothing products	Garments are described in the local and international media as exclusive and aesthetically pleasing. More than 50% of the garments are handcrafted. The handcrafted elements enhance the uniqueness of the clothing products. An example of this is re-engineered lace, which is cut with soldering irons and combined with other kinds of lace to enhance the uniqueness of the newly engineered lace.	'Each garment is handcrafted. Every piece of lace that is sewn on there is cut out and sewn on'.
Meaning of clothing products	The clothing products for traditional occasions such as weddings are unconventional and do not symbolise tradition. Most of the wedding garments, for example, are not white. The silhouettes are also not traditional.	'So it is about being different and finding that niche market. Everything you do should revolve around that'. '... we add just that little thing to make it a bit more designer than something you can go and buy in the shop'. '... most of our clients don't like to be traditional, so we add a twist'.
Uses of clothing products	The Adjust range has several clothing products (including accessories) that can be worn in different ways. This range adds value to the client in the sense that she can adjust her appearance with the clothing products and maintain an individual style.	'We have launched the Adjust range just after we launched the Just ready-to-wear range. So far the feedback from clients have been so positive. They like that they get to do different things with the same piece like this [illustrating] wrap pants that can be worn as a skirt or even a dress. We have nice pieces that you add to the plain Just (ready-to-wear) dresses to make them pop! The shoe jewellery is also a real hit, because it completely transforms a plain shoe'.

motivate designers to be open to possibilities, accept responsibility for their own evaluation and be conducive to their ability to toy with ideas.

From the findings, it is evident that collective creativity can especially be beneficial to inexperienced owner-designers who collaborate with more experienced owner-designers. Not only does collective creativity enhance ideation but it also seems to enhance the motivation of the designers and business owners to solve complex problems that are often related to external factors like the marketplace. This implies that design thinking can enhance entrepreneurial thinking, but that the design thinking can also be enhanced by collective creativity.

In view of the above conclusions, collective creativity during a design process is recommended for owner-designers who find themselves working more hours in the business rather than on the business, as the collective creativity can provide access to business opportunities. In this way, the owner-designer's role as designer and the role of the business owner can be one and the same thing, which implies that every design is strategically executed to enhance the competitiveness of the business through innovative products. Therefore, artisan entrepreneurs are encouraged to share their creativity with other designers on a regular basis.

Collective creativity can be highly beneficial to entrepreneurial support platforms such as thinkubators, business incubators or even business accelerators and is therefore recommended as a strategy that such platforms could embrace to enhance the competitiveness and sustainability of businesses. Moreover, collective creativity can be applied by artisan entrepreneurs who aim to be proactive and produce innovative, trend-setting products. It is recommended that experienced artisan entrepreneurs contribute their creativity not only to enhance the creativity of inexperienced artisan entrepreneurs in solving design problems but also to identify new business opportunities. In this regard, the authors of this study conclude that creativity shared is creativity gained.

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Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

Authors' contributions

T.T. was the project leader in conducting the research. A.J.A. contributed as scientific and conceptual contributor on the fields of entrepreneurship and creativity. M.-M.A. served as a subject and scientific contributor on the apparel industry. All authors contributed equally in compiling the final paper.

References

Aspelund, K., 2010, *The design process*, 2nd edn., Fairchild, New York.

Autio, E., Kenney, M., Mustar, P., Siegel, D. & Wright, M., 2014, 'Entrepreneurial innovation: The importance of context', *Research Policy* 43(7), 1097–1108. <http://dx.doi.org/10.1016/j.respol.2014.01.015>

Babbie, E. & Mouton, J., 2001, *The practice of social research* (South African ed.), Oxford University Press Southern Africa, Cape Town.

Balka, K., Raasch, C. & Herstatt, C., 2014, 'The effect of selective openness on value creation in user innovation communities', *Journal of Product Innovation Management* 31(2), 392–407. <http://dx.doi.org/10.1111/jpim.12102>

Berends, H., Jelinek, M., Reyman, I. & Stultiens, R., 2014, 'Product innovation processes in small firms: Combining entrepreneurial effectuation and managerial causation', *Journal of Product Innovation Management* 31(3), 616–635. <http://dx.doi.org/10.1111/jpim.12117>

Bickle, M.C., 2011, *Fashion marketing: Theory, principles and practice*, Fairchild, New York.

Bissola, R. & Imperatori, B., 2011, 'Organising individual and collective creativity: Flying in the face of creativity clichés', *Creativity and Innovation Management* 20(2), 77–89. <http://dx.doi.org/10.1111/j.1467-8691.2011.00597.x>

Blauth, M., Mauer, R. & Brettel, M., 2014, 'Fostering creativity in new product development through entrepreneurial decision making', *Creativity and Innovation Management* 23, 495–509. <http://dx.doi.org/10.1111/caim.12094>

Boztepe, S., 2007, 'User value: Competing theories and models', *International Journal of Design* 1(2), 55–63.

Brannon, E.L., 2007, *Fashion forecasting*, 2nd edn., Fairchild, New York.

Bruneel, J., Ratinho, T., Clarysse, B. & Groen, A., 2012, 'The evolution of business incubators: Comparing demand and supply of business incubation services across different incubator generations', *Technovation* 32(2), 110–121. <http://dx.doi.org/10.1016/j.technovation.2011.11.003>

Casson, M. & Wadeson, N., 2007, 'The discovery of opportunities: Extending the economic theory of the entrepreneur', *Small Business Economics* 28(4), 285–300. <http://dx.doi.org/10.1007/s11187-006-9037-7>

Cennamo, K., Baum, L., Newbill, P. & Finn, T., 2012, 'Teaching to develop critical and creative thinking skills', in P. Resta (ed.), *Proceedings of Society for Information Technology and Teacher Education International Conference*, Austin, TX, March 5, pp. 3553–3557, AACE, Chesapeake, VA, viewed 20 August 2013, from <http://www.editlib.org/p/40144>

Chan, J., Fu, K., Schunn, C., Cagan, J., Wood, K. & Kotovsky, K., 2011, 'On the benefits and pitfalls of analogies for innovative design: Ideation performance based on analogical distance, commonness, and modality of examples', *Journal of Mechanical Design* 133(8), 081004-081011. <http://dx.doi.org/10.1115/1.44004396>

Chandra, Y. & Leenders, M.A., 2014, 'User innovation and entrepreneurship in the virtual worlds', *Technovation* 32, 464–476.

Chell, E., 2007, 'Social enterprise and entrepreneurship: Towards a convergent theory of the entrepreneurial process', *International Small Business Journal* 25(1), 5–26. <http://dx.doi.org/10.1177/0266242607071779>

Cyr, A., Meier, O. & Pacitto, J.C., 2011, 'Method in their madness: Understanding the behaviour of VSE owner-managers', *Journal of Small Business and Enterprise Development* 18(2), 331–351. <http://dx.doi.org/10.1108/14626001111127106>

Denscombe, M., 2008. *The good research guide: For small-scale social research projects*, 3rd edn., McGraw-Hill, New York.

De Vos, A.S., Strydom, H., Fouche, C.G. & Delpont, C.S.L., 2011, *Research at grass roots: For the social sciences and human service professions*, 4th edn., Van Schaik, Cape Town.

Dhliwayo, R., 2012, 'A continent vs. a country: China putting strain on Africa's clothing and textile industries', *Africa Conflict Monthly Monitor*, viewed 17 December 2012, from <http://www.consultancyafrica.com>.

An introduction in the context of design', *Artificial Intelligence for Engineering Design, Analysis and Manufacturing* 29(2), 133–134. <http://dx.doi.org/10.1017/S0890060415000013>

Goldschmidt, G. & Sever, A.L., 2011, 'Inspiring design ideas with texts', *Design Studies* 32(2), 39–155. <http://dx.doi.org/10.1016/j.destud.2010.09.006>

Gong, Y., Kim, T.Y., Lee, D.R. & Zhu, J., 2013, 'A multilevel model of team goal orientation, information exchange, and creativity', *Academy of Management Journal* 56(3), 827–851. <http://dx.doi.org/10.5465/amj.2011.0177>

Hargadon, A.B. & Bechky, B.A., 2006, 'When creations of creatives become creative collectives: A field study of problem solving at work', *Organization Science* 17(4), 484–525. <http://dx.doi.org/10.1287/orsc.1060.0200>

Hartley, J., Sørensen, E. & Torfing, J., 2013, 'Collaborative innovation: A viable alternative to market competition and organizational entrepreneurship', *Public Administration Review* 73(6), 821–830. <http://dx.doi.org/10.1111/puar.12136>

Hobday, M., Boddington, A. & Grantham, A., 2012, 'An innovation perspective on design: Part 2', *Design Issues*, 28(1), 18–29. http://dx.doi.org/10.1162/DESI_a_00137

Jennings, B.J., 2011, *Factors that contribute to knowledge sharing within research based companies*, Doctoral thesis in organisational learning and instructional technology, University of New Mexico, Albuquerque, USA.

Kimbrell, L., 2011, 'Rethinking design thinking: Part I', *Design and Culture* 3(3), 285–306. <http://dx.doi.org/10.2752/175470811X13071166525216>

Kolko, J., 2010, 'Abductive thinking and sensemaking: The drivers of design synthesis', *Design Issues* 26(1), 15–28. <http://dx.doi.org/10.1162/desi.2010.26.1.15>

Lamb, J.M. & Kallal, M.J., 1992, 'A conceptual framework for apparel design', *Clothing and Textiles Research Journal* 10(2), 42–47. <http://dx.doi.org/10.1177/0887302X9201000207>

Leedy, P.D. & Ormrod, J.E., 2005, *Practical research: Planning and design*, 8th edn., Prentice Hall, New Jersey.

Lemke, F., Clark, M. & Wilson, H., 2011, 'Customer experience quality: An exploration in business and consumer contexts using repertory grid technique', *Journal of the Academy of Marketing Science*, 39(6), 846–869. <http://dx.doi.org/10.1007/s11747-010-0219-0>

- Matthews, J.H., 2010, *Investigating design, creativity and entrepreneurial processes*, in *Annual Meeting of the Academy of Management Dare to Care: Passion and Compassion in Management Practice & Research*, Montreal, QC, Canada, 6–10th August, 31 p.
- Menon G., 2015, 'The need for design approach in opportunity identification stage of product innovation', *Voice of Research* 3(4), 49–53.
- Merriam, S.B., 2009, *Qualitative research: A guide to design and implementation*, 2nd edn., John Wiley and Sons, San Francisco, CA.
- Mirza N.A., Akhtar-Danesh N., Noesgaard C., Martin L. & Staples E., 2014, 'A concept analysis of abductive reasoning', *Journal of Advanced Nursing* 70(9), 1980–1994. <http://dx.doi.org/10.1111/jan.12379>.
- Mitchell, R.K., Busenitz, L.W., Bird, B., Gaglio, C.M., McMullen, J.S., Morse, E.A. & Smith, J.B., 2007, 'The central question in entrepreneurial cognition research', *Entrepreneurship Theory and Practice* 31, 1–27. <http://dx.doi.org/10.1111/j.1540-6520.2007.00161.x>
- Moroz, P.W. and Hindle, K., 2012, 'Entrepreneurship as a process: Toward harmonizing multiple perspectives', *Entrepreneurship Theory and Practice* 36(4), 781–818.
- Mumford, M.D., Antes, A.L., Caughron, J.J., Connelly, S. & Beeler, C., 2010, 'Cross-field differences in creative problem-solving skills: A comparison of health, biological, and social sciences', *Creativity Research Journal* 22(1), 14–26. <http://dx.doi.org/10.1080/10400410903579510>
- Nagai, Y. & Junaidy, D.W., 2015, 'Meta-contents of design creativity: Extraction of the key concepts that form the sense of design', *The Third International Conference on Design Creativity (3rd ICDC)*, Bangalore, India, 12th January.
- Nattrass, N. & Seekings, J., 2014, 'Job destruction in Newcastle: Minimum wage-setting and low-wage employment in the South African clothing industry', *Transformation: Critical Perspectives on Southern Africa* 84(1), 1–30. <http://dx.doi.org/10.1353/trn.2014.0009>
- Neck, H.M. & Greene, P.G., 2011, 'Entrepreneurship education: Known worlds and new frontiers', *Journal of Small Business Management* 49(1), 55–70. <http://dx.doi.org/10.1111/j.1540-627X.2010.00314.x>
- Oddane, T.A.W., 2015, 'The collective creativity of academics and practitioners in innovation projects', *International Journal of Managing Projects in Business* 8(1), 33–57. <http://dx.doi.org/10.1108/IJMPB-10-2013-0060>
- Olim, A., Mota, I. & Silva, S.T., 2015, *The influence of creativity on entrepreneurship: The Portuguese case*, *Entrepreneurship, Human Capital, and Regional Development*, pp. 205–235, Springer International Publishing, Switzerland.
- Oliver, D.G., Serovich, J.M. & Mason, T.L., 2005, 'Constraints and opportunities with interview transcription: Towards reflection in qualitative research', *Soc Forces* 84(2), 1273–1289. <http://dx.doi.org/10.1353/sof.2006.0023>
- Olsen, N.V., 2015, 'Design thinking and food innovation', *Trends in food science & technology* 41, 18–187. <http://dx.doi.org/10.1016/j.tifs.2014.10.001>
- Parjanen, S., 2012, 'Experiencing creativity in the organization: From individual creativity to collective creativity', *Interdisciplinary Journal of Information, Knowledge, and Management* 7, 109–128.
- Puhakka, V., 2012, 'Entrepreneurial creativity as discovery and exploitation of business opportunities', in T. Burger-Helmchen, (ed.), *Entrepreneurship – Creativity and innovative business models*, pp. 3–24, InTech, Rijeka, Croatia.
- Rampino, L., 2011, 'The innovation pyramid: A categorization of the innovation phenomenon in the product-design field', *International Journal of Design* 5(1), 3–16.
- Rath, P.M., Bay, S., Petrizzi, R. & Gill, P., 2008, *The why of the buy: Consumer behavior and fashion marketing*, Fairchild, New York.
- Regan, C.L., Kincade, D.H. & Sheldon, G., 1998, 'Applicability of the engineering design process theory in apparel design process', *Clothing and Research Textile Journal* 16(1), 36–46. <http://dx.doi.org/10.1177/0887302X9801600105>
- Rennemo, Ø. & Åsvoll, H., 2014, 'Abduction, deduction and induction as concepts for understanding entrepreneurial opportunities: A metaperspective based on three views of the market process', *Academy of Entrepreneurship Journal* 20(2), 164.
- Sawhney, M., Wolcott, R.C. & Arroniz, I., 2011, 'The 12 different ways for companies to innovate', *Sloan Management Review* 47(3), 28–34.
- Schmidt, J.J., Soper, J.C. & Bernaciak, J., 2012, 'Creativity in the entrepreneurship program: A survey of directors of award winning programs', *Academy of Entrepreneurship* 18(1), 51.
- Schreier, M., 2012, *Qualitative content analysis in practice*, Sage Publications, California.
- Schreier, M., Fuchs, C. & Dahl, D.W., 2012, 'The innovation effect of user design: Exploring consumers' innovation perceptions of firms selling products designed by users', *Journal of Marketing* 76(5), 18–32. <http://dx.doi.org/10.1509/jm.10.0462>
- Shearmur, R. & Doloreux, D., 2015, 'Knowledge-intensive business services (KIBS) use and user innovation: High-order services, geographic hierarchies and internet use in Quebec's manufacturing sector', *Regional Studies* 49(10), 1654–1671.
- Shiu, S., Chien, H. & Chung, R., 2011, 'A study of learning process to promote the ability of creativity and creative problem solving in the technological university student', *International Journal of Arts and Sciences* 4(8), 31–36.
- Steiner, G., 2009, 'Collaborative creative problem solving for innovation generation: A systems approach', *Journal of Business and Management* 15(1), 5–33.
- Tadmor, C.T., Statterstorm, P., Lang, S. & Polzer, J.T., 2012, 'Beyond individual creativity: The superadditive benefits of multicultural experience for collective creativity in culturally diverse teams', *Journal of Cross-Cultural Psychology* 43(3), 384–392. <http://dx.doi.org/10.1177/0022022111435259>
- Theodorakopoulos, N., Bennett, D. & Sánchez Preciado, D.J., 2014, 'Intermediation for technology diffusion and user innovation in a developing rural economy: A social learning perspective', *Entrepreneurship & Regional Development* 26(7–8), 645–662. <http://dx.doi.org/10.1080/08985626.2014.971077>
- Tselepis, T.J., 2013, 'The development of an entrepreneurially orientated design model for the South African small business that offers custom-made apparel', Doctoral thesis, University of Pretoria, Pretoria, South Africa.
- Tumasjan, A. & Braun, R., 2012, 'In the eye of the beholder: How regulatory focus and self-efficacy interact in influencing opportunity recognition', *Journal of Business Venturing* 27(6), 622–636. <http://dx.doi.org/10.1016/j.jbusvent.2001.08.001>
- Tung, J., 2012, 'A study of product innovation on firm performance', *The International Journal of Organizational Innovation* 4(3), 84–97.
- Verganti, R., 2013, *Design driven innovation: Changing the rules of competition by radically innovating what things mean*, Harvard Business Press, Boston, MA.
- Vlok, E., 2006, 'The textile and clothing industry in South Africa', in H. Jauch, & R. Traub-Merz, (eds.), *The future of the textile and clothing industry in Sub-Saharan Africa*, Friedrich-Ebert-Stiftung, Bonn, Germany, viewed 02 June 2012, from <http://library.fes.de/pdf-files/iez/03796/16suedafrika.pdf>