

Alignment Strategies for the Clothing Industry in SA: Lessons Learned

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Abstract--The clothing industry globally has undergone rapid change within the past few decades. The production of fashion has evolved into a multi faceted industry that is not only concerned with the manufacture of clothing but also the systems of production, distribution, diffusion, reception, adoption and consumption which drive the fashion industry. The South African Clothing and Textile Workers Union (Sactwu) estimates 13400 jobs were lost in the sector in the first 11 months of 2009. SACTWU researcher Etienne Vlok says that in the mid-2000s, the industry was losing about 20000 jobs a year, but in the past three years' job losses has dropped to between 12000 to 14000 jobs a year. Changes in the global economy have enabled the requirement for flexibility, adaptability and innovation that have led to new education and training demands in order to remain competitive. The most significant demand is the proposed need for a highly skilled labour force that has the ability to employ new knowledge, technologies, business improvement methodologies and ultimately add value to existing goods and services. Essentially, these skills and capabilities are developed through a broad general higher education system. Based on research undertaken as part of doctoral studies at the University of Johannesburg, the paper highlights current experiences in the South African clothing industry and academia, and proposes the alignment of industry and academia in order to improve the skills of the workforce.

I. INTRODUCTION

The clothing industry globally has undergone rapid change within the past few decades. The production of fashion has evolved into a multi faceted industry that is not only concerned with the manufacture of clothing but also the systems of production, distribution, diffusion, reception, adoption and consumption which drive the fashion industry. The South African Clothing and Textile Workers Union (Sactwu) estimates 13400 jobs were lost in the sector in the first 11 months of 2009. SACTWU researcher Etienne Vlok says that in the mid-2000s, the industry was losing about 20000 jobs a year, but in the past three years' this has dropped to between 12000 to 14000 jobs a year [13].

Changes in the global economy have enabled the requirement for flexibility, adaptability and innovation that have led to new education and training demands in order to remain competitive [8]. The most significant demand is the proposed need for a highly skilled labour force that has the ability to employ new knowledge, technologies, business improvement methodologies and ultimately add value to existing goods and services. Essentially, these skills and capabilities are developed through a broad general higher education system [9;10].

There are a number of process improvement methodologies that can be applied in clothing manufacture.

However, the leadership of organisations require a fundamental insight into the benefits derived through the implementation of such methodologies. Unfortunately, from a South African context, 57% of the cut, make and trim organisations (CMT) operate in a primitive manner, ignoring the concept of process improvement skills development. Process improvement methodologies appear to have a negative connotation to 57% of the CMT manufacturers operating in the clothing industry in the Durban metropolitan area. In this paper, there is a brief overview of the South African clothing industry and its implication on higher education. This is followed by the presentation of the trends in the industry and process improvement methodologies that can be implemented to improve the status quo. The article concludes with a discussion of experiences and qualitative results of the implementation of process improvement strategies through a case history and re-curriculation of the clothing management programme at the University of Johannesburg.

II. TRENDS IN THE SA CLOTHING INDUSTRY

A. Unemployment and Closures of Clothing Organisations

The decline of the clothing industry in South Africa can be attributed to a number of number of reasons which has left a trail of poverty stricken, unemployed South African women who are most often bread-winners in their respective households. Historical factors that have influenced this decline include, but are not restricted to the following:

- The industry's protective tariffs and apartheid sanctions implemented by the National Party in the 1980's
- Production and ownership structures that caused inefficiencies due to high overheads
- Conservative family owned businesses with a lack of the pursuance of operational strategies
- Lack of investment in capital, marketing, operational change and skills development.
- Markets being flooded by import goods with a much lower price tag.

The cut, make and trim (CMT) industries find it difficult to negotiate wage increases as production costs escalate beyond proportion. If the lay-off of workers continues in the clothing industry, it would increase the unemployment rate, thus impacting on the economy [3].

Clothing and textile organisations in South Africa that are unable to cope with the changes in industry sought closure as a resolution. According to Statistics SA, the clothing and textiles industry employment was 106,300 at the end of

September 2010. In December 2002, the industry employed 206,900 – meaning 100,600 jobs have been lost in almost eight years. SA Labour Research Institute (SALRI) analysis of job losses and factory closures for the period July 2007 to June 2010 show that 45% of CTFL jobs lost were in KwaZulu-Natal, 29% in the Western Cape, 9% in the Free State and 8% in the Eastern Cape [20].

A further disaggregation shows that 10% of jobs lost during this period were in Isithebe, an industrial town in northern KwaZulu-Natal, while 8% occurred in Ladysmith, KwaZulu-Natal and 6% in Phuthaditjhaba, Qwa Qwa, the former bantustan in the northeastern Free State. Industrial towns and non-urban areas like Newcastle, Border Kei, Atlantis, Botshabelo and Tongaat were also heavily affected.

These are all very poor areas where few other employment opportunities exist. SALRI further found that 183 factories closed down or were liquidated in the 36-month period from 1 July 2007 to 30 June 2010. This is an average of 5 factories closing or being liquidated every month. The highest number of factory closures occurred in Kwazulu-Natal (a total of 67, or 37% of all closures). Nine factories closed in the Free State and thirteen in the Eastern Cape. Forty three of the factories that closed or were liquidated were in industrial towns or non-urban areas, including in former bantustans in KwaZulu-Natal, the Free State and the Eastern Cape.

The South African clothing manufacturing industry is a significant employer, particularly of women and of people in poor communities where few other employment opportunities exist. The majority of workers in the industry are weekly-paid or blue-collar workers with at least five dependents. Wages are very low. The current legally prescribed minimum wage in metropolitan areas for a qualified machinist is approximately R700 per week (West, 2010). These wage rates are the lowest in the South African manufacturing sector. The industry is a very significant employer of women. Figures compiled by the CTFL Sector Education and Training Authority (SETA) show that 66.7% of workers in the industry are women. For the clothing sector this figure is even higher at 82%. This means that any job losses in the industry have a disproportionate impact on women and women-headed households. It is estimated that 94% of workers in the industry are black (i.e. African, Indian or Coloured) [17].

III. DESCRIPTION OF THE INDUSTRY

The clothing industry is dispersed throughout South Africa, but is condensed in the provinces of KwaZulu-Natal and the Western Cape. In Kwa-Zulu Natal, the clothing and textile facilities are found in and around the Durban Metropolitan area with pockets in the north and south coasts, Newcastle, Ladysmith, and Qwa-Qwa. In the Durban metropolitan region (only) there are about 300 organisations employing over 15000 workers. The major part of the South African clothing industry is dominated by small and average

sized organisations, i.e. those employing less than 200 employees which make up the majority of CMT manufacturers [7]. The majority of CMT manufacturers, as well as micro-manufacturers receive their customer orders from the larger independent organisations [2].

IV. SURVEY EVIDENCE THROUGH CASE STUDY APPLICATION

The survey focused on a qualitative approach of gathering information through questions based on the current experiences of the industry. Information was gathered through telephonic discussions, personal discussions with groups and individuals and direct observation [4]. The survey only covers a few selected questions due to space limitations.

A. Ownership

In the sample investigation 36% of the organisations are affiliated to a “larger” South African organisation, 2% are part of an international organisation, 42% are privately owned (i.e., independent) companies, 18% are managed in-house as family organisations, and 2% are an experiment conducted by international organisations as a joint venture. The majority of the sample (86%) mentions that there is no transformation in their change in ownership over the past twenty years, but this does not mean that ownership would not change in the future [6].

B. Age

Of the 146 organisations, 60% are over 20 years old, 25% are over 10 years, and the remaining 15 % organisations are between 2 and 9 years. The age of organisations ranged from 2 years to 50 years. The age of the organisation is important because the older organisations that failed to improve their profitability were eventually liquidated while other organisations that re-invested in technology and human resources were able to maintain their status.

C. Capital Source

The source of capital of 38% of the sample organisations is provided by the holding company while owners of the remaining 62% of organisations finance their own companies through savings or financial institutions. 35% of the owners of the CMT (cut, make, trim) organisations were retrenched from the larger organisations and set up their own businesses through pension payouts.

D. Cut, Make, Trim (CMT) Production

Of the 146 organisations visited, 58% concentrate on cut/make/trim production, and 42% focus on the design and development of fashion trends in the industry. Some of the cut/make/trim organisations manufacture their own “brand” of products.

Cut/make/trim organisations are inclined to be sole proprietors, while other organisations are usually a part of a larger organisation. The cut/make/trim industry is in a

situation to outsource some of its operations to other organisations, such as embroidery. The outsourcing of production is considered as an effective means of evading the issues of labour and the elimination of overhead expenses. The CMT operations predominantly use the bundle system methodology and have satisfactory to poor working conditions. The profitability of CMT manufacturers (as indicated by personnel) correlates with the output performance and the profit margin.

E. Product Range

The organisations in the investigation are focused on a varied of products namely, men's and ladies fashion underwear and outerwear, children's wear, surf-wear, knitwear and a variety of other assortments.

For organisations manufacturing standard production, i.e. men's outerwear, work-wear, there is minimal emphasis on designer output. On the other hand, fashion-wear requires designers to travel around the world to obtain "fresh" ideas in the fashion world. The product profile of the sample is varied. The research reveals that men's' and boys' trousers account for 20% of the sample. This is followed by ladies outerwear 40%. Formal wear account for 28% and the remaining 12% is leisurewear and sportswear.

F. Size of Production Runs

The size of production runs varied from 50 to 10000 units per order and is changing on a day to day basis over all organisations. It is found that the CMT manufacturers are the ones that received the orders that ranged from 50 to 500 units and are pressurized for price and delivery dates.

G. Production Systems

Four organisations (3%) use the overhead rail system for production manufacture. Units move from operator to operator for completion of the respective operation. The bundle production system is used in 97% of the organisations. One organisation was forced to abandon the overhead system as their product profile changed.

H. Input Sources

75% of the organisations use local production inputs while the remaining 25% use imported materials. It all depends on the lead time and supplier links that an organisation has. With a longer lead time, an organisation has the ability to source fabrics through its supplier links anywhere in the world. This is more favourable to the larger organisations that have the ability to create relationships. The "smaller CMT" manufacturers bear the brunt of this as time is a limiting factor. Also, often CMT manufacturers are provided with the fabric that goes in the manufacture of the garment.

I. Output Performance

43% of the organisations reported that during the period 1999 and 2005 the clothing output performance was steady,

and the remaining organisations (57%) complained that output levels deteriorated. Output performance determines the profitability of an organisation and while 43% of the organisation (especially the larger manufacturers) maintained their position, the smaller manufacturers (especially the CMT manufacturers) are the ones that failed to implement process improvement strategies to improve their competitive status. The rate of labour performance varied between manufacturers from 60% to 85%, dependant on the skill level of management and their implementation of work standards.

V. RECOMMENDATIONS FOR INDUSTRY

A. Management Commitment

Any change in the organisation stems from top management. Commitment from management drives the process of change and nothing can be achieved if management does not support the initiative. Once management gives their approval any change is possible, but employees need to understand and support the changes for it to be successful (Robbins and Decenzo, 2005).

B. Supply Chain Management Transformation

The conversion process within the clothing and textile industry is of strategic importance for the clothing manufacturer. This perspective sees all customers and suppliers as part of one complex network. The underlying understanding of the transformation processes in the supply chain into a synchronized chain should be the primary objective of manufacturers.

The supply chain management transformational activities provide fast access to relevant and accurate information that enables manufacturers to be proactive and act accordingly should there be a problem. The timely access to information within the supply chain can pay off considerably in improved throughput, lower costs, less inventory, shorter cycle times, and the highest levels of customer service. The core objective of supply chain management is the provision of effective information and material flow within the network of suppliers and customers. By the use of software packages such as SAP and the Internet, organizations can speed up the information flow process and make it more effective (Stevenson, 2010).

The flow of both information and material can significantly differentiate organizations from its competitors. As customers and suppliers synergise together in the creation of mutually beneficial partnerships, the necessity for enhanced supply chain management processes and systems becomes more crucial. Focus on the improvement of the supply chain network is being receiving lots of attention due to its forward thinking in terms of demand information, inventory positions, order fulfillment, supply management, and a whole host of other information exchange activities would transform the manner in which business is conducted. The supply chain would link manufacturers, suppliers and customers seamlessly throughout the world. The speed of information flow itself would mandate faster flows of

material, which only lean manufacturing operations can generate [18].

In a clothing industry context, supply chain management is experiencing a dysfunctional mix of processes, policies, systems, communications, performance measures, and organisational accountability. Processes are evidently divided silos, with barricaded “power pockets” of internally focused corporate hierarchical maze that is the standard for decades [19]. Processes are hybrid and include everything from manual order entry to faxes and phone communications. It is evident that most organizations have a long way to go before they would have fully transformed their supply chain for the twenty-first century.

C. Cycle Time Reduction through the Application of Work Study

Through the implementation of work-study principles, and the determination of standard times for all tasks, manufacturers would be able to respond to their customers quickly and deliver quality products on time. Cycle time reduction through method analysis is one of the most important elements of successful manufacturing. The trend will continue, thus enabling organizations to focus on the order to delivery cycle time.

Work measurement is concerned with the length of time it should take a person to complete a task. These are vital inputs for workforce planning, estimating labour costs, scheduling, budgeting, operator efficiency, line balancing, incentive schemes and so forth. A standard time is the amount of time it should take a qualified worker to complete a task, under normal working conditions, with the correct tools and equipment and material inputs, in an ergonomically designed workplace. Time standards can be developed in a number of ways: (a) stopwatch time study, (b) historical times, (c) predetermined times – general sewing data (GSD), stamp system (d) work sampling.

Method study, which is the second branch of work study, is concerned with finding easier ways of doing things, and eliminating wasted effort and unnecessary work. The following steps are followed:

- Decide priorities – address the benefits and whether they are worthwhile.
- Analyse existing method – use symbols and codes to describe every movement in detail.
- Develop better method – on analysing the method, a work-study officer would often find better ways of doing the task.
- Test and confirm – the new method should be tested with human factors in mind.
- Install new method – the new method needs to be installed with the support of all stakeholders.
- Follow up - On installation, the new method needs to be followed up to determine whether any problems may arise.

D. Throughput Time

Garments passing through a factory from one operation to another can be considered as a “pipeline” (Basdeo, personal communication). The total time garments take to pass through the pipeline is called the “throughput time.” The total number of garments in the pipeline at any one time is called the “work-in-progress.” Work-in progress and throughput time are related to each other quite simply, via the rate of production.

$$\frac{\text{Work-in-progress}}{\text{Production rate}} = \text{Throughput time} \quad (\text{equation 1})$$

As an example, if there are 8000 unfinished garments on the factory floor and the average production rate is 200 per hour, the throughput time would be $8000 \div 200 = 40$ hours, or almost a week.

Work-in-progress is essential particularly in the clothing industry due to style changes on a frequent basis, machine breakdown which is very common, difficult fabrics and so on. To obtain this protection, the manager should ensure that the work in progress is distributed evenly throughout the factory.

E. Garment Costing

Profits are essential for the survival and growth of any business [19]. Profits must be planned and strategies established to achieve the profits desired. This means measuring, controlling, and managing the investment in materials and labour required to produce the products. Costing is the process of estimating in advance what the manufacturing cost of a garment would be so that the correct selling price can be determined. It is a very critical process as it will determine the organisations profitability [1].

Manufacturing costs include all the direct costs and expenses that are incurred in production of the product. Accurate costing of the investment in a specific product provides a basis of cost management, pricing and evaluation of the market and profit potential. Organisations may use direct costing, absorption costing, or activity based costing to determine the cost of individual styles. Costing is done at various stages of product development and production. Budgets and performance reports are used to monitor and control costs.

F. Line Balancing

An assembly line is defined as a set of distinct tasks which is assigned to a set of workstations linked together by a transport mechanism under detailed assembling sequences specifying how the assembling process flows from one station to another. Balancing a line means that each operator should have an equal amount of time to complete a task. Since this is not so, a theoretical calculation is done using the following formulae:

$\frac{\text{No of operators on the line} \times 60}{\text{Total standard minute value of the garment}}$ equation 2

example $\frac{25 \times 60}{15}$

Therefore the output rate of the line would be 100 units per hour. The operations on the line then need to be balanced at 0.60 standard minutes per hour. The constraint within the assembly line needs to be identified and exploited as mentioned in the TOC.

VI. IMPLEMENTATION SITE

The implementation of process improvement took place at four different clothing manufacturing plants in Durban.

A. Organisation A

This organisation employed 150 people. One line (25) operators were chosen on the manufacture of blouses. The researcher evaluated the current status with the production of 75 units per hour. The researcher performed work measurement through the performance of time studies on all operations. Methods of operation and the layout of the workplace were evaluated to improve the handling of garments on all 25 operations. The operations were balanced to minimise time between operations. The layout was adjusted to improve the flow of products to improve work flow between operations. Over a period of two weeks the production rate improved to 120 units per hour. This was an efficiency improvement of 62.5%. Thus, through fundamental work-study practices (5.14) the output of the line improved by approximately 63%.

B. Organisation B

This organisation employed 350 people and manufactures men's trousers. One line of 45 operators was chosen. The researcher evaluated the current status of the production line and observed the following:

- lack of performance standards;
- lack of line balancing;
- inefficient flow of materials;
- machinists waiting for work;
- Inefficient work layout and ergonomics.

The output averaged 80 units per hour. The researcher spoke to management and the machinists to inform them of the current status. With the application of work-study principles the researcher changed the following:

- changed the method of handling the garment with ergonomics in mind
- improved the flow of work
- balanced the operations
- eliminated wastage in the form of time, unnecessary movement of materials and non-value adding activities

- set time standards for each operation

The production output performance improved to an average of 145 units per hour. This was an efficiency improvement of 57% within 3 weeks. The researcher addressed the above issues through the application of work-study principles and achieved a considerable improvement in productivity.

VII. PROGRAMME RECURRICULATION TO MEET INDUSTRY NEEDS

A. The Impact of the Clothing Industry on Academia

The declining number of students enrolling for a qualification in clothing management is evident in both the United States of America as well as the United Kingdom as Higher Education Institutions experienced difficulties in recruiting students for textile and clothing manufacturing programmes due to a negative public perception of the industry. This has brought with it the need to revise the Clothing Management programme in order to keep abreast with the changes in the industry and to align the programme to meet the regional demand for graduates. Empirical data was gathered through a series of focus group and individual interviews and analysed in terms of the idyllic relationship between education and the workplace.

B. Discussion of Findings

1) Student Needs

A situation analysis was conducted on the current Clothing Management programme during 2009 in collaboration with third year students in order to establish the future of the program from a student perspective (Edwards, 2001). It was required of the students to analyse the situation in which the Clothing Management programme exists with regards to competitors, product (curriculum content) and service delivery in order to identify strengths, weaknesses, opportunities, threats and develop recommendations based on the findings. The scope of this study included conducting interviews with students at all levels of study and tracing alumni in order to identify employment opportunities and preferences. The results from this study are summarized below:

- It was felt that the branding profile of UJ is well received and gaining strength as a preferred choice of education with regards to the 'student experience' which is supported by FADA's location, facilities, staff experience and qualifications. The need to maintain a focus on technology and computer applications was emphasised.
- Few people know about the Clothing Management programme and often confuse it with fashion design however, once explained, it generates a lot of interest. It was also noted that a name change to include the word 'fashion' would be beneficial in raising the scope and profile of this programme making it more attractive to potential candidates.

- The current industry linkages were considered as extremely important for employment opportunities however it was expressed that exposure to industry at all levels of study would be highly beneficial to the programme and skills development.
- Programme content should place more emphasis on a diverse product range, principles of the design process, textile and quality applications, branding and brand management, retail and marketing and entrepreneurial studies.
- Student employment preferences are within the retail sector as technologists, merchandisers, buyers or those who choose to start their own businesses. They have identified the Clothing Management as a programme that will equip them with production and business skills that are specifically applied to the clothing industry.

2) Industry Needs

At the CTFL SETA's annual strategic planning workshop held in 2009, *The Textile and Clothing Skills Development Plan: Strategic opportunities for the sector* (CTFL SETA 2009: 13) was presented which identifies the following professional skills to be delivered by Higher Education Institutions with specific reference to the re-circulation of the current Diploma Clothing Management, or a derivative thereof, as including:

- Product development skills including garment design, Computer Aided Design (CAD)/Computer Aided Manufacturing (CAM), pattern-making, style, colour, size applications and fabric application, with attention given to fabric technology, production management and supply chain arrangements.
- Develop and supply the right product-buying skills to retailers. The diploma should focus, in order of priority and time allocated in the programmes, on supply chain arrangement, fabric technology, product development (design) and production management.

Other important general management skills as identified by the CTFL SETA [5] that are lacking include:

- Motivational skills.
- Marketing skills, specifically understanding customer and end consumer needs in the market in which the company operates (South African consumer), development and use of market knowledge systems, market segmentation and differentiation.
- Product costing: local manufacturing entities have to negotiate along the supply chain to first deliver to customers the product they require and at the price they are willing to pay.
- Branding – building a brand that is linked to low cost, quality, flexible and reliable delivery.
- Establish skills capability to improve efficiency to supply quick response products [11;21].

In meetings held in 2007, 2008 and 2009 with EDCON, a prominent Gauteng retail industry supporter and employer of clothing management graduates from the University of Johannesburg, the following critical areas that will improve the supply base of employable candidates have been identified as:

- Strengthening the product development and skills content of the programme as these are core competencies required by the industry with specific reference to: conceptualisation and transformation of two dimensional forms into three dimensional products; body shapes and sizing; the processes involved in developing fibres to fabrics; fabric sourcing; quality management systems; construction problem solving and innovative global communication skills.
- Developing the knowledge base of production and manufacturing processes including exposure to manufacturing environments within the clothing industry
- Developing depth by delivering the programme using an integrated process approach and emphasising diversity of product range
- Developing life skills and corporate communication skills components, both written and spoken
- Incorporating components that provide exposure to the industry at all levels of study.

C. Advisory Board

Meetings are held on a continuing basis with the industry advisory committee comprising of member from both the retail and manufacturing sectors within the clothing industry. The members are considered to be experts in their fields and participate in the experiential training component as well as provide employment opportunities for graduates.

D. Student Participation

Focus group interviews are ongoing with students at all levels of study which provides insight into the “student experience” within the department and their career aspirations.

E. Fashion Retail in Gauteng

Meetings are held at the head office of EDCON, one of the biggest clothing and hard-line retailers in South Africa, on an annual basis whereby they inform and advise the department on critical curriculum development issues that reflect both the retail and manufacturing sectors requirements.

F. SETA Participation

The department of Fashion Design participates in Clothing, Textile, Footwear and Leather Sector Education Training Authority (CTFL SETA) skills planning and activities as required.

G. Other Higher Education Institutions

Open communication is engaged in with colleagues' from Cape Peninsula University of Technology (CPUT) and Durban Institute of Technology (DIT), who are the only other

institutions, offering the current National Diploma in Clothing Management.

VIII. RECOMMENDATIONS

The student obtaining this qualification will demonstrate competency in analysing and applying the principles of the fashion system from production through to consumption in order to meet market demands [9].

In order to achieve this purpose the programme is structured around the following outcomes:

- Develop and apply a production strategy that reflects market research, product development, branding, marketing, merchandising and distribution of a product range that meets the needs of an identified fashion target market [15;16].
- Demonstrate the ability to apply advanced textile application, manual skills and computer technology (CAD/CAM) to the manufacturing processes of a diverse range of clothing products.
- Develop technical packages that analyse, solve and communicate problems related to technical product development and quality improvement of fashion products.
- Apply business, personnel and operations management principles to enhance quality, productivity and profitability related to clothing manufacturing.
- Conduct basic research in a selected specialised area of the clothing supply chain: technical product development; textile technology and application; production and quality systems; marketing and branding; material and product sourcing; adoption and consumption of fashion items.

At this stage the programme has been approved by the university and is currently awaiting response from the Department of Higher Education and Training for implementation in 2012.

IX. CONCLUSION

Investment in capital equipment and skills development has been very slow in the clothing industry in comparison to competitor nations. There has been tremendous impact of these weaknesses along the supply chain which has been indicated through closures and employment decline that has led to the creation of the less sophisticated CMT sector. It is imperative that both government and industry address this matter through incentives and policies in order to save the industry. To date, the DTI and been in discussion with the SETA and monies are being allocated to industry, but the application process is time consuming.

Skills are crucial in modern manufacturing, and increasingly dependent on higher levels of education.

[10]. The clothing industry is facing the consequences if systemic failure to invest in education and development in a predominately black workforce. While significant progress

has been made in the Sector Education and Training Authorities, the overall level of skill is inadequate to the task of rapidly raising quality and shifting to high value-added production. Current training efforts are not bringing large enough numbers of workers into “learnerships”, and the industry itself is not able to finance a major skills upgrade. The capability of management at all levels is also a weakness. This is partly due to the view that textiles and clothing are “sunset industries”, making them unattractive to graduates. This weakness is compounded by the lack of investment in skills development. A significant scaling up of skills is required to address the ailing industry [14; 1].

The extent of the challenges facing the SA clothing industry is clear from the information presented.

The international environment is extremely demanding while current operating conditions are unfavourable [12]. However, should the management of the clothing industry embrace change in the form of process improvement, education and training and technology innovation, there is a potential to improve the productivity of clothing manufacturers by approximately 30%.

REFERENCES

- [1] Bell.T. 2006. “Clothing chains wail over quotas is hypocrisy”, SA Media. University of the Free State. The Star.
- [2] Bennet, M. 2003. “Organising in the informal economy: A case study of the clothing industry in SA”, Small enterprise development (SEED) working paper no. 37, Geneva, ILO.
- [3] Buxey, G. 2005. Globalisation and manufacturing strategy in the TCF industry. International Journal of Operations management 25:2. MCB university press.
- [4] Cooper, D.R., Schindler, P. 2011. Business Research Methods. McGraw-Hill. New York.
- [5] CTFL SETA annual strategic planning workshop .2009. The Textile and Clothing Skills Development Plan: Strategic opportunities for the sector.
- [6] Edwards, L.2001 Globalisation and the skill bias of occupational employment in South Africa. South African Journal of Economics, Vol 69, No. 1, pp40-71.
- [7] Edwards, L.,Schoer, V.2001. “The structure and competitiveness of South African trade”, Paper presented at the TIPS Annual Forum, September 10-12.
- [8] Inggs, M. 2007. Clothing retailers seek an alternative to China. SA Media. University of the Free State.
- [9] Kraak, A. (ed.) (2000). Changing Modes: New Knowledge Production and Its Implications for Higher Education in South Africa. Pretoria: HSRC.
- [10] Kruss,G. 2004. Employment and employability: expectations of higher education responsiveness in South Africa. Journal of Education Policy Vol. 19, No. 6, November 2004 Taylor & Francis Ltd.
- [11] Luckett, K. 2007. The Introduction of External Quality Assurance in South African Higher Education: An Analysis of Stakeholder Response. Quality in Higher Education, Vol. 13, No. 2. Taylor & Francis Ltd
- [12] Le Roux, M. 2007. South Africa-China Textile pact welcomed. Mail and Guardian online. 26 June.
- [13] Mathews, S.C. 2010. Business Day. I-Net Bridge. Johannesburg
- [14] Palmi, R.2007.A survey of South African Clothing companies in Kwa-Zulu Natal. The Alexander Report. Durban.
- [15] Robbins, S.P., Decenzo, D.A.2012. Fundamentals of management – Essential concepts and applications. 7th edition. Prentice Hall. New York.

- [16] Stevenson, WJ. 2010. Operations Management. 9th edition. McGraw Hill. New York.
- [17] SACTWU, 2010 (www.comptrib.co.za/.../73LMNov10-Supplementary-Submissions-by-SACTWU.pdf)
- [18] Ward, P.T. Durray, R. 2000. Manufacturing strategy in context: environment, competitive strategy and manufacturing strategy, Journal of Operations Management, 18:2, 123-38.
- [19] Weitz, P.L. and Levy, M 2010 . Retailing Management. McGraw-Hill. New York.2010
- [20] Statistics South Africa, Various publications, including Survey of Employment and Earnings (SEE), Labour Force Survey and Retail Sales (www.statssa.gov.za) 2010
- [21] West, E. 2010. A big day for wages in the clothing industry. I-Net Bridge. Johannesburg