
EXAMPLES OF SYNERGY BETWEEN SCIENCE AND CLOTHING INDUSTRY IN POLAND

Dr. Ewa GRANDYS

Technical University of Lodz Institute of
World Economy and Textile Marketing
Żeromskiego 116 Lodz Poland
ewa.grandys@poczta.onet.pl

ABSTRACT

Regarding the cooperation between Polish clothing manufacturers and research centres the most urgently needed are anthropometric studies of the population and permanent improvement of managers' knowledge. The article has two parts. Part one discusses the existing anthropometric tables in Poland, presents modern ways of carrying out new surveys and provides grounds for this action. Part two explains in the context of markets Europeization why managers have to expand their knowledge resources and outlines the main points where the knowledge is subject to verification.

Key Words: Anthropometric studies, Clothes size labelling system, Integrative management

1. INTRODUCTION

The vehicle for cooperation between clothing manufacturers and representatives of the scientific community is a forum participated by the Polish Federation of Apparel and Textiles, the Polish Committee for Standardization (PCS), the Polish Chamber of Fashion and industry chambers, local government and business associations. It is a place where crucial subjects and current issues are discussed. An example of the cooperation can be adjustment of Polish standards to the EU system by the PCS. Before the accession, the EU laws applied only to Polish exporters bringing their products to the Single Market. Following the act of accession, the Community standards have become compulsory for all Polish manufacturers. Non-compliance with the standards makes it impossible to compete in the EU market.

The above illustrates only one case of cooperation and new areas should be sought for taking joint efforts. This article discusses the necessary scopes of action.

2. ANTHROPOMETRIC STUDIES

European countries repeat anthropometric studies every ten years. In Poland, however, the most recent survey took place in late seventies that is more than 20 years ago. It was a mutual action undertaken by the Research and Development Centres for the Clothing Industry, Knitwear Industry and Footwear Industry and the Polish Academy of Sciences in Wrocław. Ten years later scarce financial resources made it possible to survey children only, because more reliable studies require several thousand persons making up a randomly selected sample to be measured. Even though the measurement method was sufficiently precise, it was very time consuming too. It took around 30 minutes to measure one person. Many research teams were appointed, usually assigned to examine populations in different age groups. The entire population was broken down into five groups combining age interval 0-18 years and additionally into four body types for females and males (10).

- Age groups: 0 - 2 years (infants)
2 - 6 years (children)
6 - 11 years (girls and boys)
11 - 15 years (girls and boys)
15 - 18 years (girls and boys)
- Female body types identified in relation to the difference between the chest girth and hip girth:
 - type A – a difference of 4 cm
 - type B – a difference of 8 cm
 - type C – a difference of 12 cm
 - type D – a difference of 14 cm
- Male body types followed from the difference between the chest girth and waist girth:
 - type A – a difference of 14 cm
 - type B – a difference of 10 cm
 - type C – a difference of 6 cm
 - type D – a difference of 2 cm

The results were published in early 1980s in the form of tables providing information about body dimensions and build of the Polish population. In each age group, from 33 to 37 numerical characteristics are used to describe the body type. The data is used to prepare basic constructions of

garments and knitwear products (e.g. size 164/96 for females) and size increments allow to grade patterns to produce other sizes.

The anthropometric tables that took so much effort to be assembled and that have been used to date by the clothing and knitwear industries are outdated. It is commonly known that new generations are taller than their predecessors and that a statistical Pole is increasingly stout. Growing height and weight parameters affect other dimensions: the length of arms and legs, the girth of the neck, chest, waist, etc.

New anthropometric studies are therefore a must. They could be conducted using 3D body scanners, i.e. devices enabling the transfer of three-dimensional shapes to computer memory (1). Such devices are already available on the European market. Scientists at the Warsaw Technical University have developed a computer-aided body measurement method. The Institute of Knitting Techniques and Technologies in Łódź that declared its readiness to carry out measurements applied to the Scientific Research Committee (SCR) for a grant to construct a device and to conduct the survey. If they fail to obtain the necessary funding, then the equipment will have to be purchased from the UK company Qinetiq. In August 2003 the organization announced that it had an available and tested prototype of a camera capable of taking precise measurements of a human body. Although such equipment is costly, so much measurement time can be saved that the final balance of costs of the undertaking should be acceptable for the SCR. That the survey is needed is quite obvious. Having current anthropometric data, the manufacturers will be able to construct products fitting contemporary body types. In addition, anthropometric studies will allow correct labelling of clothes sizes, so

that customers could find garments suiting their needs, because **all size labelling systems operated across Europe are based on body sizes and not on the size of a garment**. Polish enterprises determined to compete with expanding imports of clothing have to use today anthropometric data prepared in other countries or trust the intuition of their constructors.

The European Union requested an anthropometric survey of 20,000 females, males, girls and boys, conducted in line with the international standard ISO 8559 – “Garment construction and anthropometric surveys”, complying with the basic scientific assumptions and emphasising the data practicality. The goal was making a compilation of clothes labelling systems operated in the Single Market. To prepare the compilation, a group of CEN (Committee European de Normalisation) specialists was appointed several years ago that has been cooperating with many companies that either produce or sell clothes. The expected outcome is an European System of Labelling Clothes Sizes. The envisaged system is proposed to have four elements (11):

- a) prEN 13402-1 – labelling of clothes sizes (with conditions, definitions and procedures for pictogram-based size labelling).
- b) prEN 13402-2 - labelling of clothes sizes (with definitions of primary dimensions (PD) and secondary dimensions (SD) that have been approved by the entire CEN).
- c) prEN 13402-3 - labelling of clothes sizes (with tables specifying body dimensions and intervals/increments necessary to grade the patterns).
- d) prEN 13402-4 – labelling of clothes sizes (with a three-digit coding system).

Part one (amendment of standard ISO 3635) has been prepared for submission. The standard will promote the use of pictograms as visualizations of body dimensions applied by clothing manufacturers. A pictogram is meant to serve a customer and it will contain primary and secondary body dimensions stated in centimetres and a three-digit code.

Part two is a proposal of the primary and secondary dimensions. This issue is still under discussion. An example of a preferred primary dimension is the chest girth and secondary dimension are, for instance, the height and hip girth (females). The extent of coding enables five combinations of every primary dimension with secondary dimensions.

Part three is tables providing specific dimensions (15 characteristics) for males, females, boys and girls. Their mutual combinations mentioned in part two allow generating around 800 codes. It is not a closed-end system, so new dimensions can be added.

Part four, i.e. a coding system using only three digits (correlated with the pictogram) for size identification. The decision about having a three-digit coding was made during one of the CEN plenary sessions in Brussels. A larger number of digits would generate a system that would be too expensive in electronic data exchange. The existing pictograms underpinned, for instance, by four primary and secondary dimensions, quote in the extreme case as many as twelve digits. The three-digit coding system was developed by Dr. Rien van Osch. Its capabilities and rules of operation still need to be examined, but it is known already today that it is necessary for logistic purposes.

The basic advantage of the presented system is its ease of implementation. The prerequisite for making it operational is availability of a set of current anthropometric data updated

on a regular basis. The updates should be provided by appointed R+D units, because clothing manufacturers are unable to produce them on their own. Because customer relations are the paramount value for all firms, the activities ultimately tend to make garments fit customers as well as possible in order to avoid:

- sales downturn and making customers take advantage of competitor's products,
- customers' returning 50% of items selected from mail-order catalogues due to ill-fitting clothing,
- road blocks to the expansion of online commerce.

Changes to the EU size labelling system have already been decreed. There is a serious concern, however, whether the new member states will be capable of implementing the system. The barrier is their lack of current dimensions of populations. A given company or a member state is not obliged to implement all four parts of the system. It can use, for instance, only the pictograms without the coding system, but such a decision excludes a country from the European logistic system, thus contributing to a lower volume of clothing being sold in the EU market. All the arguments support the opinion that it is very urgent for the R+D units to conduct anthropometric studies in Poland.

3. FORMING OF A POLISH MANAGER

In the 2003-2007 business environment ranking produced by the Economist Intelligence Unit, which assess countries in ten categories, Poland has moved three positions upward compared with 2002 and ranked 29th (3). The best score was given to Canada for her infrastructure, market offering large expansion potential and

openness to foreign products and foreign capital.

In the present economic circumstances Poland has a limited room for improvement, for instance regarding its infrastructure. One of her assets can be well-educated managers, knowing how to operate in the international market. Therefore, continuous improvement of managers should be another area of cooperation among the academic centres, R+D units, the Polish Foundation for Management Promotion and industry representatives.

Today the learning process actually ends when a person decides to quit his or her profession. The technological race and always changing economic circumstances necessitate investments in human resources. Especially valuable are persons who feel the internal drive to self-development and self-realization. For it seems that Polish enterprises that have experienced all meanders of economic revolution need managerial staff who:

- can create company success,
- can think creatively,
- have high professional skills,
- feel the need for permanent learning and personality development,
- show considerable adaptability to changes taking place in the environment.

The time when it was enough to fulfil the set of entrusted duties and the major virtue was not making any decisions is gone forever. It takes comprehensive knowledge to manage an enterprise and the managerial staff cannot be the only party to possess it. The same is expected from the middle-level personnel and even individual workers. Only joint efforts of the whole team can be successfully utilised by the manager of the 21st c. Managers formed according to

modern standards will be able to prepare their enterprises to win in the competition with strong European clothing and other enterprises. After a period when imports were on top, Polish consumers start buying domestic clothing again that wins even the European markets. This process is not spontaneous. The surviving or expanding enterprises are those, whose managers knew their goals, such as:

- a vision of a product or a service,
- market strategy possibly well-suited to a product,
- skilfully applied marketing instruments,
- effective management of human resources being firm's "most important asset",
- efficient and successful cooperation with customers.

All the indicated areas of knowledge have to be developed and enhanced. Many key decisions made at the top management levels are either intuitive or arise from managers' belief that they know how to use particular management tools. This is an „original sin” case and the “sinners” do not even realise that they should continue education and improve their skills.

So-called **integrative management style** where workers are partners rather than subordinates and the command-based system is replaced with leadership (6) is still incidental. At the same time, the new generation has a completely different attitude to working. To be able to manage the best-skilled personnel, a manager needs the pertinent knowledge of management, so that the intellectual and creative capacity of his team could be forged into company's success. Otherwise, mismanagement can be the reason for organization's failure, as well as frustration or departure of its personnel. According to research, valuable workers are neither afraid of hard work nor expect

comfortable working conditions, if their enterprise is experiencing some restructuring problems. But they have to see that their work makes sense and is important for the organization. They also have to trust in having development opportunities. The length of time a gifted worker is willing to stay in an enterprise depends exclusively on his or her relations with the immediate superior. Popularization of modern HRM solutions among the managerial staff is an important task of the academic centres.

Another and equally important element that the managerial staff should constantly improve is their knowledge of how to manage a company. The knowledge cannot be replaced by long years of holding the top positions or supplemented by the reading of management books. Only exploration of the available literature combined with participation in a series of training events delivered by prominent and successful management theoreticians and practitioners offers development opportunities to managers. Unfortunately, inclination to learning is not a common feature among the latter. Is it so because managers are unwilling to improve their

qualifications, or perhaps the available training does not fulfil their expectations of quality? It is quite probable that the present situation arises from both the reasons. But modern management involves extensive knowledge and managers' effectiveness and performance will depend increasingly often on their knowledge of procedures and circumstances and on the implementation of marketing strategies. Only academic centres having their own research activities and numerous and strong contacts with the business practice are capable of training managers to fulfil tasks imposed by the age of globalization. Enterprise management in a national state is drawing to a close and the entire knowledge of the field has to be revised one more time. The integration of markets in the European Union has converted the existing national markets into regions of the Single Market. As a consequence the euromarketing is emerging, whose goals and strategies have to be learnt in view of the future globalization of the world economy.

4. CONCLUSIONS

- The competitive advantage of Polish clothing manufacturers is subject to the revision of the anthropometric data. Its verification will help improve the fit of garments to body types.
- The prerequisite for implementing the European three-digit system for labelling clothes sizes in Poland is conducting a new anthropometric survey.
- If the new three-digit system is not implemented, Poland will be left behind the European logistic system, with consequently dropping sale of clothing manufactured by domestic producers.
- Only managers formed according to modern standards can prepare their enterprises to compete in the European market by defining their goals appropriately.
- Modern HRM solutions are the basis for enterprises to gain a competitive position in the European market.
- In the markets Europeization process permanent improvement of knowledge is a must for managers.

REFERENCES

1. Bójko, M., 2003, "Trzeci wymiar", *Newsweek*, No: 37/2003.
2. Brajczewski, Cz., 1994, "Analiza porównawcza systemu oznaczania wielkości odzieży w oparciu o normy polskie i normy międzynarodowe" ISO, Institute of Anthropology, Polish Academy of Sciences, Wrocław.
3. CXO - Magazyn Kadry Zarządzającej, No. 8/2003
4. Komor. M., 2000, "Strategie marketingowe na eurorynku", *Euromarketing*, PWN, Warsaw.
5. Mruk. H., 2002, "Strategie marketingowe", *Wydawnictwo Akademii Ekonomicznej*, Poznań .
6. Norma międzynarodowa ISO 3635: Oznaczenia rozmiarów ubrań – Definicje i procedura pomiaru ciała, First issue 1977
7. Norma międzynarodowa ISO 8559: Konstrukcja odzieży a badania antropometryczne – wymiary ciała, First issue 1989
8. Penc, J., 2000, *Kreatywne kierowanie; Organizacja i kierownik jutra, rozwiązywanie problemów kadrowych*, Placet, Warsaw.
9. Pietryga, T., 2003, "Zasady oznaczania towarów", *Biznes i Prawo dodatek do Gazety Prawnej*, No: 16.
10. Wiliński, T., 1981, *Tabele szczegółowych wymiarów dzieci, dziewcząt, chłopców, kobiet i mężczyzn*, COBRPO, Łódź.
11. Zembrzuska-Hroboni, A., 2002, "Jednolity europejski system kodowania rozmiarów odzieży", *Biuletyn informacyjny Polskiej Izby Odzieżowo-Tekstylnej*, No:141.