



Research Article

Development of Theoretical Fashion Design Process Model for Modern Elderly Women

Joe S Au* and Jin CH Lam

Abstract

A design process becomes the way designers respond to this variable problem structure. A structured design process helps designers as markets become increasingly aggressive; companies' use of team formats for solving problems is increasing, and developing fashion products becomes more complex. Therefore, studying how controlling and varying these design processes is one of the most important skills a designer must develop. There is a tremendous growth of needs in terms of both quantity and quality regarding elderly fashion clothing nowadays due to the aging population and the transformation of elderly fashion clothing in that more modern elderly consumers wish to buy more and better fashion clothing. The main objectives of this study are to: a) examine the major influential fashion design creation factors; b) investigate the methods for gathering inspiration and analysing collected information; c) identify the criteria used to evaluate the new elderly fashion designs; and d) study the sequence of stages in the design process. A theoretical fashion design process model for modern elderly women will be developed accordingly.

Keywords

Fashion; Design process model; Modern elderly women

Introduction

By the influence of low mortality rate, the proportion of elderly people in Hong Kong kept rising in decades and life expectancy in Hong Kong has been raised from 72.3 years for men and 78.5 years for women in 1981 to 80.3 years for men and 86.7 for women [1]. It is expected the population will remain as an ageing trend with the proportion of the population aged 65 and over rise from 13% in 2011 to 30% in 2041 [2]. For clothing choices in old age, there is a complex interplay between physiological and cultural influences [3]. There is a tremendous growth of needs in terms of both quantity and quality regarding elderly fashion clothing nowadays due to the aging population and the transformation of elderly fashion clothing [4,5]. More modern elderly consumers wish to buy more and better fashion clothing [6,7]. Due to different cultural backgrounds and special needs of the elderly people, existing fashion design process models could not fully address this specific design issue. Systematic model which describes the elderly women fashion design and its design process model are strongly suggested to address this issue. This study

seeks to identify the dimensions of creative success within this specific domain. The development of the fashion design process model for modern elderly women would deliver definite effectiveness to both academic and fashion industry locally and internationally.

This study will produce new knowledge about the interrelations of fundamental influences and the variants in the importance of factors influencing the design process of creating new elderly women fashion design. The explicit evaluations about how the influences interrelated and varied the elements that formulated the design process model in fashion add significantly to current knowledge. Academic researchers can adopt the findings and methodology to propose effective solutions with different cultural backgrounds. In addition, it is important for fashion designers to examine this subject area more closely and to achieve a better theoretical understanding of creating high quality fashion designs for older consumers. By refining their own creative thinking and design process, they are able to make their designs more original and successful in the market place. Fashion retailers and manufacturers are able to generate better sales and profits, and modern elderly female consumers would have greater choice in garment selection to fulfil their wants and needs.

The objectives of this research study are to:

- Examine the major influential fashion design creation factors;
- Investigate the methods for gathering inspiration and analysing collected information;
- Identify criteria used to evaluate the new elderly fashion designs; and
- Study the sequence of stages in the design process.

Background of research

Creativity is a highly complex context [8]. Designers are always challenged by complicated thoughts during their creative process. Researchers and theorists devoted their effort to understand the subject of creativity. Models and theories of design process were proposed and studied by researchers in different design disciplines.

Model of design process is system thinking in naming a particular approach to understanding and solving problems. It helps the designer in developing creative design thinking based around the building-up of ideas. Design process was described as one of becoming sensitive to or aware of problem, bringing together available information, searching for solutions, and communicating the results [9]. Three major stages of design process were: viewing the process in linear way, aiming to improve during the process and viewing design as back and forth relationship between problems and solutions [10].

The 'problem solving concept' was first applied in architecture and engineering design and its aim was to analyse the problem at first then apply methods to synthesise or conceptualise the proposed solution and subsequently to propose an evaluation in form of a statement [11]. Many fields such as education, psychology and philosophy use design processes to help develop creative thinking [12]. The major fashion design models were based on the theory of architecture and engineering design [13]. The analytical framework was referred to the

*Corresponding author: Joe S Au, Associate Professor of the Institute of Textiles and Clothing, Hong Kong Polytechnic University, Hong Kong, Tel: (852) 2766-5529; Fax: (852) 2773-1432; E-mail: joe.au@polyu.edu.hk

Received: April 23, 2019 Accepted: May 25, 2019 Published: May 31, 2019

elementary steps involved in the design process: analysis-synthesis-evaluation [14].

Fashion design process model

Fashion design process can refer to the designer's creativity and aesthetic innovation which produces new fashion styles, and involvement in marketing and production process and the importance of adopting a design process model to fashion and textile design has been explained and demonstrated by numerous scholars [15-17]. For example, a model of six steps for the creative process that [17] includes: 1) identifying problems, 2) exploring problems with creativity, 3) refining design details, 4) creating prototypes, 5) evaluating prototypes, and 6) implementation. A variety of factors have been found to influence designers during the creative process and these must be understood in advance of proposing a model of design processes.

As shown above, the analytical framework of creative process in fashion design is based on the concepts of 'analysis-synthesis-evaluation' developed in other design fields. Besides the adoption from other fields, a variety of factors have been found to influence designers during the design process, such as historical, social, aesthetic, cultural, psychological, economical and technical factors [18]. Although the design process models adopted by designers were similar and based on the similar concepts. Design processes are varied with respect to different factors, stages and the target customers and the focus on each process also varies according to the different design field. Recently, a study of biomechanics and its consideration of elderly's anatomical, biomechanical and psychological characteristics on fashion has been proposed and its aim is to ensure the integrity of the movements, as well as comfort, safety and inclusion of these individuals [19]. But, limited holistic approach to design process model for creating modern elderly women fashion has been developed to fulfil the specific wants and needs of this type of customers.

Modern elderly fashion

Aging is a developmental stage which re-establishing the relationship between older people and social structure, by redefining themselves and changing self-perception [20]. Today's elderly people are active, enthusiastic and interest in appearance and fashion conscious about dressing well for maintaining the self-image as part of social context [21, 22]. Elderly women still desire to have fashionable clothing as a meaning of sense of self and were increasingly care about appearance management as the secondary or cognitive manipulation of unmanageable and unavoidable body changes affected by aging [23-25]. Baby boomers that were born after 1946 are confessed as more fashion-conscious [26] by comparing with past generations.

Clothing for older people is an essential area of interest for the clothing industry because of the growth of the aging population [27]. The aging population is expected to grow considerably in the next 20 years. The elderly are demanding better clothes in terms of aesthetics, psychological needs and fit. Clothing has become increasingly more important to elderly people because they want to establish new social connections, create an image and hide the imperfections arising from old age [20]. In addition to aging population, transformation in culture and lifestyles, other factors like physical changes in the body may be said to influence the needs, preferences and behaviours of elderly in clothing consumption. In the light of the above, it may be stated that anatomical, physiological, pathological, psychological and social dimensions brought about by old age affect clothing requirements [28].

Methodology

The qualitative research method using the content analysis approach was considered to be the most suitable to identify the means by which the Hong Kong fashion designers experienced in designing elderly fashion, how they interpreted their experiences, and how they structured the design process when creating new elderly fashion collections. Content analysis involved the formulation of a convincing proposition from the collected data and their content, and discovering concepts and themes [29]. It also assisted researchers in the classification of content and the systematic quantification of certain characteristics in terms of their frequency of occurrence within a selected context [30].

Interviewing was chosen as a means to collect data-beliefs, attitudes, and expectations of the interviewees-and to understand the cognitive models that shaped their views [31]. In this qualitative research a semi-structured interview with open-ended questions was formulated, permitting greater flexibility when collecting data, and greater efficiency in eliciting more detailed responses from the interviewee's perception of reality. The structure and the content of the questions, designed in the light of literature from both domestic and international research studies, in addition to the experience and judgment of the research team, were refined on completion of the pilot test. Pilot study with three face-to-face interviews were conducted within the sample category – fashion designers in order to identify problems and benefits associated with the data collection and analysis process in the field, as well as testing the proposed interview questions [32]. The findings of the pilot study were not incorporated in the overall findings.

In the data analysis stage, the analytic induction strategy was used to segment the collected data for categorisation of elderly fashion and for relationships between such categories. The subject perspective coding process was used to compare and contrast the findings and to extract the design patterns of the Hong Kong fashion designers [33].

Sample and data collection

Three pilot interviews and fifteen in-depth interviews were conducted in this study. The sample category is fashion designers with more than five years solid working experience in the local or overseas fashion retailing market and employed by a company which has either more than five retailing shops or more than 30 employees in Hong Kong.

In the interviews, the interviewees were asked to give their views on the open-ended questions about elderly fashion and sequence of stages in the design process. The conversations were recorded and notes were simultaneously taken [30]. The open-ended questions are as follows:

- 1) What are the influential factors that inspire you in creating new elderly fashion?
- 2) What are the methods that you use to gather inspiration for creating new elderly fashion?
- 3) How would you analyse the collected information for generating new design ideas?
- 4) How would you evaluate the new elderly fashion designs?
- 5) Do you adopt any design sequences in designing new elderly fashion designs?

Data analysis

The data were analysed and the research findings were systematically arranged, compared, contrasted and insights subsequently presented [31]. In this study, the data analysis was carried out in four stages. In the first stage, the strategy of segmentation was used to scan and classify the data into three focused issues: the major factors of design process, and the design sequences. The second stage was to categorise the data into different alphabet subject perspective

codes according to subject nature. Two-order category levels were used to extract the meta-attributes of the data. In the third stage, the occurrence of each code was counted and screened for the purpose of identifying any discernible patterns in the data by applying the critical occurrence level to over one third of the total number of interviewees. Finally, the patterns were compared and interpreted to develop the fashion design process model for modern elderly women. The meta-matrix of the design process model for modern elderly women is presented in Table 1.

Table 1: Meta-matrix of the design process model for modern elderly women.

Evidence of planning process	1st order category	2nd order category
Firstly, I study and review the brand-image and brand positioning	Branding	Business Attitude
It is necessary to plan the product-mix of the collection	Market strategy	Business Attitude
We would review the past sales record for reference	Past sales record	Business Attitude
Planning of the colour and fabric story of the new collection	Design details	Aesthetic Presence
We would conduct an analysis of our targeted markets before designing	Market characteristics	Business Attitude
I review the customer's feedback when planning my next collection	Customer's satisfaction	Business Attitude
In designing my collection, I need to plan the delivery structure and schedule	Scheduling	Business Attitude
In the design process, design management is very important to the fashion designers	Design management	Business Attitude
Evidence of collecting ideas process	1st order category	2nd order category
It is very important to keep searching for new fabric	Material research	Practical Consideration
I would visit websites and read fashion magazines to get the latest fashion trend information	Trends	Socio-cultural Attitude
On business trips, I observe the life style and the customer's characteristics of our targeted markets	Market research	Business Attitude
I like travelling to enrich my life experience which is very important in my collection	Personal experience	Psychological Satisfaction
I collected the visual details, such as Chinese operas for my design inspiration	Visual features	Aesthetic Presence
By seeing more of impactful things, such as fine art pieces, I develop my personal aesthetic	Personal aesthetic	Aesthetic Presence
In one of my collections, I made use of some clothing details of Chinese opera	Cultural content	Socio-cultural Attitude
It is necessary to get the theme direction and the design information from our buyers	Customers' requirements	Business Attitude
It is the updated sales records which provide me the most useful information	Past sales records	Business Attitude
Evidences of conceptualising ideas process	1st order category	2nd order category
I analyse the collected information according to my personal taste in which fashion designers should have a good sense of quality judgment	Personal aesthetic	Aesthetic Presence
I make use of my knowledge of fashion and textiles, such as my colour concept board to create my designs	Design details	Aesthetic Presence
It is the exploration of personal feeling and emotion to search for inspiration	Personal satisfaction	Psychological Satisfaction
I would think about production availability of the ideas before sketching	Production technology	Practical Consideration
The market trend board is useful to help us analysing the information of our targeted markets	Trends	Socio-cultural Attitude
When setting my theme, the concept of retailing and brand image are more important than other factors, such as personal style and trends	Branding	Business Attitude
Study of the targeted markets is useful for fashion designers to set their design concepts and ideas	Market characteristics	Business Attitude
The demand of the targeted markets is important for me to develop my design ideas	Customers' requirement	Business Attitude
I like to find my design ideas by exploring the characteristics of different fabrics, especially the natural fabrics	Material Characteristics	Practical Consideration
References of sales history of some design styles are always helpful to formulate my new design ideas and to analyse the collected information	Past sales record	Business Attitude
In designing a new collection, I need to search for new ideas and details in order to attract our consumers	Creativity	Psychological Satisfaction
Evidence of synthesising ideas process	1st order category	2nd order category
I visualise the concept of my ideas through sketching	Psychological visualisation	Psychological Satisfaction
I make use of my mental library of details to develop the beading swatches for my clients	Design details	Aesthetic Presence
It is necessary to consider the performance of the selected fabrics	Material suitability	Practical Consideration
In the product mix of my collection, 20% of my designs are trendy items	Trends	Socio-cultural Attitude
When sketching my designs, I think about the factor of body consciousness	Body figure characteristics	Practical Consideration
There is a production meeting in my design process in order to discuss the technical issue of the designs and ideas	Production details	Practical Consideration
I need to consider the signature details and the brand image	Branding	Business Attitude
In my collection, 60% of my designs reflect my personal identity	Personal style	Aesthetic Presence
Evidence of evaluation process	1st order category	2nd order category
After sampling, there is a fitting session to judge and amend the designs	Dimension determination	Practical Consideration
In the design process, on-going evaluation of the process details is essential to achieve good design quality	Design quality	Definition of Good Design
I evaluate the collection by consideration of our brand image	Branding	Business Attitude
The customers' feedback is very useful for evaluation of the designs and planning for the next collection	Customers' satisfaction	Business Attitude
The sales records reflect the market value of the designs	Sales records	Business Attitude

Results and Discussion

The major influential factors

From the interview survey, it was found that there were five major influential factors affecting the designs of Hong Kong fashion designers. They are Business Attitude, Aesthetic Presence, Socio-cultural Attitude, Psychological Satisfaction and Practical Consideration. Particularly, Business Attitude outweighs the other four factors in this issue. Most of the Hong Kong fashion designers, especially the fashion designers from the trading companies, manufacturers and the local retailing stores take the characteristics of their targeted market, the requirements of their customers or clients, the brand-image and the past sales records into account when creating their new designs. This demonstrates the fact that the roles of the Hong Kong fashion designers have tended to diversify as a consequence of the increase of ‘Original Design Manufacturer’ (ODM) and ‘Original Brand Manufacturer’ (OBM) business in recent years.

In addition, Aesthetic Presence has had a similar degree of influence as Business Attitude. The name-brand fashion designers are more influenced by their personal aesthetic, taste and style when designing. They also well understand the nature of business due to their multi-disciplinary role as the designers-owners of their companies, and the rise of their design consultancy business for the mainland China market. Fashion designers from the trading companies, manufacturers and the local retailing stores commonly considered current global trends as the major element of the factor Socio-cultural Attitude in creating their new designs.

According to the findings, Psychological Satisfaction and Practical Consideration equally influence the designs of the Hong Kong fashion designers. The designers tend to consider the practical and functional matters.

The design process model

The results of the interview survey indicated that Planning, Collecting ideas, Conceptualising ideas, Synthesising ideas and Evaluation were the five most common stages in the design process and the design process model is shown in Figure 1. In the planning stage, almost half of the interviewees considered the elements of the Business Attitude such as branding, market strategy, past sales record, market characteristics, customer’s satisfaction, scheduling, and design management at the beginning of their design processes. They made use of these elements in order to review their brand-images, manage their design processes, cater to the wishes of their target customers and maximise their profits.

They then started to collect information from the different sources including material research, the global trends, the cultural signals in which they were interested, market research, their customers’ requirements, the past sales records, their personal experience, the visual features of the objects which they liked, and their personal aesthetic.

All of the interviewees from the categories of trading companies, manufacturers and local retailers focused on the specifics of the material and the global trends research, while the name-brand fashion designers were more diversified in their research activities, which sprang from the above five major influential factors. The difference in approach can be explained by the differing nature of their business and the characteristics of their targeted markets. Most of the Hong Kong name-brand fashion designers sell their unique design styles to the high-end fashion markets and provide design consultant service to some of their clients all over the world. On the contrary, the fashion designers from the trading companies, manufacturers and local retailers in Hong Kong are restricted by their product development and manufacturing roles as required by the OEM or ODM, the brand-images of their clients or their companies, the demands of high street

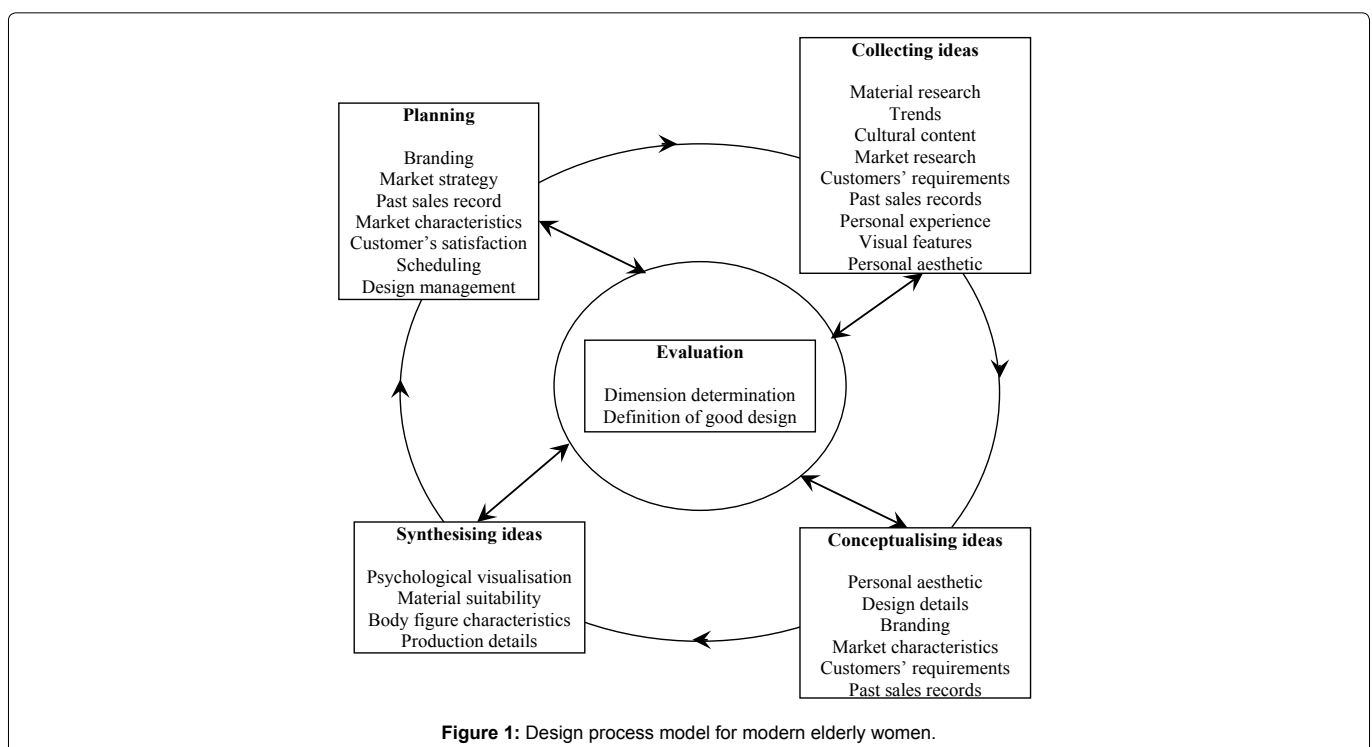


Figure 1: Design process model for modern elderly women.

fashion and trendy markets, and the need to be competitive during the Collecting ideas stage.

Subsequently, most of the interviewees would develop their concepts in the forms of theme or story boards, colour and fabric boards. In this stage of Conceptualising ideas, the majority of the interviewees stated that they were influenced by their personal aesthetic, the design details which they knew, the branding, their market characteristics, their customers' requirements, and the past sales records. The findings indicate that most of the Hong Kong name-brand fashion designers tended to make their judgments based on personal taste and aesthetic when developing concept boards. Most of the fashion designers from the other categories were inclined to take business attitudes into account rather than their aesthetic preferences at this stage.

The next stage in their design processes was Synthesising ideas. From the abstract design concepts and ideas in their minds, all of the interviewees synthesised their concepts and ideas by means of sketching the design details. According to the findings, half of them liked to fulfil their need for psychological satisfaction in fashion, while some would consider the material suitability, the body figure characteristics of their targeted customers, and the production details of their ideas in accordance with the factor Practical Consideration. Then the samples would be processed for fitting and revision.

In this interview survey, half of the interviewees proceeded to the evaluation stage in their design processes. Some of them interpreted this as the fitting session to amend the details and the dimensions of their designs, whereas others regarded it as the on-going judgment process of good design quality when designing.

Conclusion

The Hong Kong fashion designers broadly define elderly fashion in the wider context of socio-cultural issues, but practically judge a good elderly fashion design in a more personal and commercial way. The Business Attitude is the direct link between a good elderly fashion design, the major influential factors and the major design constraints of the Hong Kong fashion designers. It is also dominant in the Planning stage, the Collecting ideas stage, and the Conceptualising ideas stage of the design process of Hong Kong fashion designers. The findings also indicate a good balance of the personal aesthetic and the business attitude in the Conceptualising ideas stage, and a good balance of the psychological satisfaction and the practical consideration in the Synthesising ideas stage of the design process of Hong Kong fashion designers. However, no direct relationship exists between the factors for each of these stages. Hong Kong fashion designers tend to link them up by evaluating their design processes according to their definition of good elderly fashion design. In summary, good elderly fashion design – incorporating the Business Attitude, the Aesthetic Presence, the Psychological Satisfaction and the Practical Consideration plays an important role in the design process model for creating modern elderly women in Hong Kong.

References

1. Census and Statistics Department (2012) Demographic trends in Hong Kong 1981-2011 Hong Kong.
2. Census and Statistics Department (2012) Hong Kong population projections 2012-2041 Hong Kong.
3. McCann J (2009) Design for aging well. Textiles, The Textile Institute, U.K.
4. Au J, Lam J, Ho C (2016) Design preferences and experience of older people's choice in fashion in Hong Kong. *International Journal of Fashion Design, Technology and Education* 9:183-191.
5. Chao H, Luximon A, Cheung CS, Mo Y (2018) An explorative study of elderly fashion. In: Goonetilleke R, Karwowski W (eds) *Advances in physical ergonomics and human factors. AHFE 2017. Advances in intelligent systems and computing* 62.
6. Martin CR (2015) Conceptualizing elderly buyer behavior. In: Bellur V (eds) *The 1980's: A decade of marketing challenges. Developments in marketing science: Proceedings of the Academy of Marketing Science*, Springer.
7. Zhang MZ, Andrew S, Warnaby G, Gill S (2016) Exploring the impact of lifestyle on fashion consumption behaviour for older Chinese women. In: Rebelo F, Soares M (eds) *Advances in ergonomics in design. Advances in intelligent systems and computing*, Springer.
8. Lawson B (2006) *How designers think: The design process demystified* (4th edtn), Elsevier/Architectural, Burlington, US.
9. Lawson B (2004) *What designers know*. Oxford: Elsevier Architecture Press US.
10. Cross N (2008) *Engineering design methods: Strategies for product design*. John Wiley, New York.
11. Eder WE, Hosnedl S (2007) *Design engineering: A manual for enhanced creativity*. CRC Press US.
12. Wynn D, Clarkson J (2005) *Models of designing*. In: Clarkson J, Eckert C (eds) *Design process improvement*. Springer, Germany.
13. Takala R, Keinonen T, Mantere J (2006) *Processes of product concepting*. In: *Product Concept Design*. Springer, Germany, pp 57-90.
14. Pahl G, Beitz W, Feldhusen J, Grote KH (2007) *Engineering design: a systematic approach* (3rd edtn). Springer Germany.
15. Lamb, JM, Kallal MJ (1992) A conceptual framework for apparel design. *Cloth Text Res J* 10: 42-47.
16. Regan CL, Kincade, DH, Shelden G (1998) Applicability of the engineering design process theory in the apparel design process. *Cloth Text Res J* 16: 36-46.
17. LaBat KL, Solkolowski SL (1999) A three-stage design process applied to an industry-university textile product design project. *Cloth Text Res J* 17: 11-19.
18. Stone E (1999) *The dynamics of fashion*. Fairchild.
19. Das Neves EP, Brigatto AC, Medola FO, Paschoarelli LC (2015) *Biomechanics and Fashion: Contributions for the design of clothing for the elderly*. *Procedia Manuf* 3: 6337-6344.
20. Jackson HO, O'Neal GS (1994) Dress and appearance responses to perceptions of aging. *Cloth Text Res J* 12: 8-16.
21. Szmigin I, Carrigan M (2001) Learning to love the older consumer. *Consumer Behav* 1: 22-34.
22. Solomon M, Rabolt N (2004) *Consumer Behavior in Fashion*. Englewood Cliffs, NJ: Prentice Hall.
23. Tiggemann M (2004) Dietary restraint and self-esteem as predictors of weight gain over an 8-year time period. *Eat Behav* 5: 251-259.
24. Thomas J, Peters C (2009) Silver seniors: Exploring the self-concept, lifestyles, and apparel consumption of women over age 65. *International Journal of Retail & Distribution Management* 37: 1018-1040.
25. Thurman E (2010) *Atlanta apparel show Vendors report orders up* (1st edtn) *Women's Wear Daily*, Atlanta.
26. Brown M, Orsborn C (2006) *Boom marketing to the ultimate power consumer-the baby boomer woman*. New York: American Management Association.
27. Civitci S (2004) An ergonomic garment design for elderly Turkish men. *Applied Ergonomics* 35: 243-251.
28. Park JMC (1989) Self dressing for the elderly arthritic: a case study. *Journal of Home Economics* 81: 6-10.
29. Stokrocki M (1997) Qualitative forms of research methods. In: La Pierre S, Zimmerman E (eds.) *Research methods and methodologies for art education*. National Art Education Association.

30. Burns RB (1994) Introduction to Research Methods. Longman Melbourne.
31. Krippendorff K (2004) Content Analysis: An Introduction to its Methodology. London: Sage UK.
32. Balnaves M, Caputi P (2001) Introduction to Quantitative Research Methods: An Investigative Approach. Sage London UK.
33. Bethlehem J (1999) Cross-sectional Research. In JA Herman, JM Gideon (Eds.) Research Methodology in the Social, Behavioural and Life Sciences. Sage London UK.

Author Affiliations

[Top](#)

Institute of Textiles and Clothing, Hong Kong Polytechnic University, Hong Kong

Submit your next manuscript and get advantages of SciTechnol submissions

- ❖ 80 Journals
- ❖ 21 Day rapid review process
- ❖ 3000 Editorial team
- ❖ 5 Million readers
- ❖ More than 5000
- ❖ Quality and quick review processing through Editorial Manager System

Submit your next manuscript at • www.scitechnol.com/submission