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**Overweight Teenagers Consumption Behaviour:
Apparel purchasing in online vs. physical stores**

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Abstract

The purpose of this paper is to investigate apparel consumption of overweight and obese teenagers in Danish public school in Rønne. The total number of participants was (n=144), age 13-16 years, the weight distribution of participants responded to the national statistics of 11% of teenage population being overweight or obese. Adolescent buying behaviour is quite complicated matter, because of the socio-cultural factors that play big role in shaping the teenagers preferences of clothes.

To better understanding overweight teens buying behaviour we used quantitative method. Self-administered questionnaires were translated into Danish and distributed to students. The Questionnaires were comprised of 27 questions with 2 of them having 8-10 sub-questions. We used Rosenberg's Self-Esteem Scale and Body Shape Questionnaire to evaluate teenagers' self-esteem and body image (body-esteem). The results for shop preference showed that most of the teenagers visited physical stores 111 out of 134, the rest bought either online or used both channels to buy clothes. Also around half of the teenagers showed interest in using internet shop as a way of buying clothes some time later in the future.

When buying clothes, the brand did not have much importance when choosing desired apparel. However, the brand was still slightly more important for overweight teenagers than for normal weight ones. Size was ranked as the most important criterion when buying clothes. Furthermore, around 40% of the sample couldn't get the right size to fit them. More surprisingly is that the large part of those 40% that could not find the correct wear S (small) or M (medium) sized clothes.

Large part of our results was influenced by the cultural background that the teenagers come from, that is Danish culture. The "Danish way" which promotes equality, might have had influence on teenagers' self-esteem and body image, however, further research is needed to evaluate it.

1. Introduction

Teenagers consume more and more each year. It is forecasted that their consumption is going to grow for more years to come. Teenagers buy various items ranging from CD and apparel to computers and TV. They get money from their parents and some of them possess a credit card of their own. Shops are trying to adapt to this change. Some of them have launched prepaid cards, so that the teenager can buy clothes or any other item without the need of going with parents. (Mangleburg *et al.*, 2004; Piacentini and Mailer, 2004)

As the generation of computer and internet era, teenagers feel comfortable with using all the possibilities it can offer. This is also a challenge as well as opportunity for the marketers to try expanding their physical presence into the virtual world. This will increase the profits for the company and would help overweight teenagers, who have high body dissatisfaction and do not want to be asked in shop for bigger size, or be stared at when coming into the shop.

Overweight is a social factor that stigmatizes from year to year (Puhl and Moss-Racusin, 2008; Tang- Péronard and Heitmann, 2008; Lartner *et al.*, 2007). The overweight phenomenon is the result of excessive calorie intake that does not balance the consumption (Nichlasen, 2005). That report of Den Danske Fedmeepidemi says numbers of overweight teenagers (14 – 16 years old) are tripled from 1972 to 1998. According to National Board of Health in Denmark, every fifth child is overweight¹ and 48% of Danish teenage girls are not satisfied with their weight (Nichlasen, 2005). The consequences of being overweight are both physical and psychological; the anxiety of being mocked during sports class, failure of getting fit, desired clothing, and other children's bullying that poisons their lives leading to a resignation from their social lives (Ørntoft and Madsen, 2005). Such psychological problems tend to continue to their adulthood. Approximately 70% of overweight children become overweight adults (Pierce *et al.*, 1997; enletterebarndom.dk).

Experts of social psychology have argued convincingly that *self-esteem* is influenced by interpersonal feedback and its meaning to an individual (enletterebarndom.dk, 2011). And, it

¹ <http://www.enletterebarndom.dk/Fakta-om-overvaegt.aspx>. Retrieved on 15th April 1:00 pm.

has been discussed that psychological problems of being overweight directly affect their social lives. Being overweight contribute negatively to the children's *low self-esteem* negatively. Recent studies about the concept of self-esteem as a sociometric model conclude that low self-esteem increases likelihood for social exclusion. (Josephs *et al.*, 2003) Overweight adolescents are exposed to criticism and social exclusion which weaken their school work and social interactions.

Although many theories relate low self-esteem with regards to overweight teenagers, some specific studies suggest various negative psychological responses of young people to their overweight condition (Kiess *et al.*, 2004; enletterbarndom.dk, 2011). An investigation of self-esteem among 14-18 years teenagers in Sweden shows that there is no difference in self-esteem between the overweight / obese teenagers and the ones with normal weight. On contrary, in the USA the overweight and obese adolescents are said to have lower self-esteem than normal weight teenagers (Weight categories will be described later in the report).

Body image is one of the most important aspects of an adolescent's self-esteem (Solomon and Rabolt, 2004). Dissatisfaction of body image might be influenced by body shape and body size overestimation (Cooper *et al.*, 1987). Physical changes during adolescent period affect teenagers' relationship to clothing (Brock *et al.*, 2009). In regards to body image for overweight and obese teenagers, clothing has been identified as one of the most important contributor for creating better body shape / appearance. They tend to utilize clothes to change their body's perceived shape which is defined by culture. The closer body self-perception to cultural ideal, the higher should the self-ratings of body attractiveness should be (Cash and Pruzinsky, 2002).

External factors (media, family and peers) have crucial role in adolescents' perceived body image. Family and friends are the informal reference groups (Solomon, 2004) that deeply influence a teenager's body image development (Cash and Pruzinsky, 2002). Mass media endorses what an ideal body image looks like and the way to achieve the beauty ideal, f.eg. by means of dieting and exercising (Cash and Pruzinsky, 2002). Campaigns in advertisements result in increasing body dissatisfaction among adolescents.

Those campaigns create brand awareness among teenagers, especially branded clothes to create their self-identity (Lindstrom and Seybold, 2003; Piacentini and Mailer, 2004). While clothing is

utilized to create better body shape, it is also identified as the most important mean to gain social acceptance and create positive self-esteem among adolescents (Lachance *et al*, 2003).

Conformity of reference group validates the teenagers' opinion and behaviours (Solomon and Rabolt, 2004). In most cases, consumers model their behaviour to be consistent with what they think the group expects of them; high agreement among adolescents about 'best dressed' and 'not dressed right' indicating high awareness of fashion expectation (Solomon and Rabolt, 2004, pp. 395). Such behaviour has been of great interest among marketers and researchers. They are one of the fastest growing segments (National Textile Centre, 2005). Teenagers contribute to the market with their significant purchasing power in their own segment (Brock *et al*, 2009). They have their own money to spend and major role in family decision making (Zollo, 2004).

Despite their crucial position in family spending, teenagers are of major interest and under-researched, especially studies relating *body measurement and self-image* to clothing size of the increasing number of plus-size adolescents (National Textile Centre, Brock *et al.*, 2009). Despite the possible clothing issue faced by plus-sized teenagers, there is little attention paid in that topic (Brock *et al*, 2009).

1.1.Problem Definition

For the model of our study please look at Appendix 2. This study aims to find the relation of physical and social-psychological dimensions of overweight teens in their apparel buying behaviour. We would like to know whether self-esteem among overweight Danish students (13-16 years old) follows the general concept (i.e. the more weight they have, the lower is their self-esteem is). Then, we would like to find out if low self-esteem co-relates with online clothes purchasing.

In other words, we are interested in examining the Danish plus-size teenagers' behaviour of whether they are reluctant to visit physical stores due to low self-esteem and instead buy their clothing online.

From the problem definition, we have three research questions:

Research question 1 focuses on weight, whether it influences overweight teens on their preference of stores. The heavier they are the bigger size (clothes) they need. We visited few apparel stores in Aarhus area, the shopping assistants told us that not all *brands* have size 2XL or 3XL. Therefore we would like to find out if the overweight teens will choose online stores instead. The plus sizes create negative beliefs among teenagers and their surroundings. The stigmatization affects their self-esteem negatively that they are reluctant to visit physical stores.

- Does weight influence their preference of stores?
 - o H1: Size unavailability makes overweight teens choose online stores
 - o H2: low self-esteem increase preference to buy clothes online

Research question 2 focuses on body image perception of the teenagers. Body image plays an important role in the establishment of self-esteem. If people have negative belief about their body image, they will consequently have low self-esteem. That is the reason why we think that it is relevant to measure body image of teenagers.

- Do overweight teenagers perceive their body image negatively?
 - o H3: Overweight teenagers rate their appearance not as attractive as the normal weight ones

Research question 3 focuses on brand. Having been utilized to establish security, brand brings trend and style which define teens' identity. Martin & Bush found out that brand was considered one of the main attributes in apparel shopping. We propose that brand will make overweight teens will compensate their low self-esteem by buying branded clothes. As mentioned in RQ1, due to their reluctance to visit physical stores, they prefer online stores.

- Do overweight teenagers buy branded clothes online?
 - o H4: Overweight teenagers prefer branded clothes more than normal-weight teens
 - o H5: They prefer to buy desired branded clothes online

1.2. Delimitation

We decided to focus only on teenagers' consumer behaviour particularly from 13 to 16 years of age. They are reported to be increasingly influential during purchase decisions making in family. They undergo a process of consumer socialization which is inspired by parents and friends (Solomon and Rabolt, 2004). According John (2008) our target group is in Reflective Stage because they become more strategic as their knowledge about branding and pricing becomes more sophisticated (John, 2008; Beatty and Talpade, 1994)).

Referring to one of the literatures "Consumer Behaviour in Fashion", we delimit the meaning of fashion to clothing only (Solomon and Rabolt, 2004). Oxford dictionary defines fashion as a popular style of clothes, hair, etc. at a particular time or place. According to Solomon, people tend to equate fashion with clothing and accessories. In fact, fashion includes all types of cultural phenomena such as toys, games, cars, food, TV shows, etc. Due to the broad meaning, we delimit fashion to clothing. We focus only on consumer (in this case: adolescents) behaviour in apparel buying decision making.

Most literatures about overweight relates to eating disorder, self-esteem, body image, etc. As we are interesting only in self-esteem and body image, we therefore do not discuss eating disorder as part of our study (although eating disorder and body image is correlated). This will give more space for us to discuss self-esteem and body image in relation to online buying behaviour in depth.

1.3. Structure of the Thesis

This thesis starts with brief introduction of the problem that is going to be investigated, followed by problem definition, delimitations, structure of thesis and methodology.

In the 2nd part, theoretical tools, which will be used for the evaluation of our results, will be introduced. First there will be brief description of consumer behaviour to better understand the psychological factors that influence shopping choices. Five major topics creating our theoretical

background will be discussed: Shopping online, self-esteem and clothing, body image, weight and brand.

In the 3rd part, results derived from the help of statistical tools will be shown. The hypothesis will be tested by SPSS 18 by means of descriptive statistics to get general information around the mean of key variables (BMI, age, height, etc.) and regression to see the correlation between independent variables.

Accordingly the 4th part will discuss about the outcome of the results of this research, which will be compared with previous studies. Possible implications and nuances will be mentioned there.

In the 5th part the final results and implications for future researches will be discussed.

1.4.Methodology

Study about consumer behaviour is still young, especially in connection with fashion. It grows inter-connectedly with other disciplines, in this case, psychology. Doing research on consumers employs particular set of beliefs (paradigm). According to Solomon and Rabolt (2004), there are two kinds of paradigms that dominate the study of consumer behaviour. The basic one is called Positivism; the emerging one (as some researchers believe of paradigm shifting) is Interpretivism.

The Positivism is the only approach in this thesis as it emphasizes the study of empirical data as we emphasize the study of empirical data in order to investigate the associated propositions (Paltridge and Starfield, 2008). The propositions were derived from problem definition: to reveal the relation of physical and social-psychological dimensions of overweight teens in their online apparel buying behaviour. In other words, we are interested to examine Danish plus-size teenagers' behaviour whether they are reluctant to visit physical stores due to low self-esteem and instead buy their clothing online.

Our theory framework (secondary data) is based from theories that are derived from previous work done by researchers. Literatures used in this study are mostly based from USA (Kim and Lennon, 2007; Bearden *et al*, 2001; Cash and Pruzinsky, 2002; Cooper *et al.*, 1987) and UK (Al Sabbah *et al*, 2009) researches, especially those for building the hypotheses. As our primary

data, we were required to make a survey in which respondents filled in a questionnaire about their buying behaviour in the past, present, and future. The primary data served as a revealing factor of socio-psychological of overweight teenagers' consumption behaviour. Moreover, it also serves as additional background information in the Discussion section. Data received will be analyzed using quantitative tools and methods.

In this quantitative analysis, teenagers of 13-16 years old in Denmark are the target group. Our reason of choosing such a group as our population study is because teenagers contribute to the market with their significant purchasing power in their own segment (Brock *et al.*, 2009). The hypothesis will be tested by SPSS 18 by means of descriptive statistics to get general information around the mean of key variables (BMI, age, height, etc.) and regression to see the correlation between independent variables.

1.5. Survey Method

Participants

Our target group is children between 13-14 years old (7th grade of Danish education level). We got access to do our survey in Rønne Skole, Rønne. It turned out that the number of students per class was quite low. We expected that each class would contain about 30 pupils but there were 16 students on average in each class. Thus, we took initiative to expand the target to 15-16 years (8th & 9th)². In total we had 144 students from nine classes.

Procedure

We did a self-administered paper-based survey instead of online questionnaire (studsurvey) because we considered our young respondents quite reckless that would see the questionnaire as waist of their time, and they would rather choose something else. There was big possibility that they would just forget to fill in our questionnaire. Therefore, we decided to conduct a paper-based survey. The data gathering took place over a period of two days. On the first day questionnaires were handed out for 4 classes and on the second day for 3 classes. The response rate overall was good out of 144 potential respondents 134 answered most questions. For most

² The respondents' age still conforms with 'Reflective Stage' of Consumer Socialization Stages

sensitive weight height and age questions the response rate was lower as expected 120 teenagers indicated their weight height and age. To increase response rate, we offered a reward of 400DKK in form of two gift cards from an apparel retailer.

Questionnaire

The questions are designed to enable hypothesis testing on store preferences as dependent factor of self-esteem (Rosenberg's scale is assigned), body image (Body Shape Questionnaires), brand In order to receive highest response rate, we tried to ask as little questions as possible, but still maintaining appropriate number to support our hypothesis evaluation. Total number of questions asked was 27, with two big questions containing 8-10 sub-questions. Long abundant questions were avoided as they would decrease respondents' willingness to answer. Also we used close-ended questions in large part of questionnaire, only in few cases open-end questions were used in order to gain better insight of teenagers' behaviour. As the target group was Danish-speaking students, the questions were translated into Danish by help of Mr. Bjarke Faarup, the history teacher at Rønne Skole in Rønne, Southern Djursland.

We use various combinations of scales and measurement in the questionnaire. In Comparative Scale, we applied Rank Order Scaling to find out which aspect matters the most when the teens buy their apparel: brand, price, style, or size. In Non-Comparative scaling technique, we applied Itemized rating scale (5-point Likert Scale) to provide easy task for our young respondents. There are several dichotomous questions without non-forced choice to keep strong control of the answer. Nevertheless, in the field, we allowed the students to answer 'both' for Q1 about their preference of store (physical or online). Unique rating scale configuration, e.g. smiling face scale, was taken into consideration. In the end, we did not have any question suited for such configurations.

From the consumer psychology side we want to find if there is incentive for a person with negative self-esteem and body image to shop online, specifically for clothing. We applied Body Mass Index (BMI) to categorize our respondents to normal or overweight, Rosenberg's scale for self-esteem and Body Shape Questionnaire (BSQ) for body image measurement. Age factor (13 – 16 years old) plays big role in questions formulation. For the sake of simplicity, we used

colloquial language after translating the questions into Danish, as also the same style of language was used for Rosenberg Scale and BSQ questions.

There are many tools to measure self-esteem such as Rosenberg's Scale. Rosenberg self-esteem scale is a ten item 4-point Likert scale. Each statement is answered on a four point scale from strongly agree to strongly disagree. The original sample consisted of 5024 High school Junior and Seniors from 10 schools in New York. The questionnaire has 5 positive and 5 negative statements, the rating for positive statements is: Strongly agree=3, Agree=2, Disagree=1, Strongly disagree=0, for the negative statements the scoring is reverse.

Other questions are derived from our hypotheses; some are them are key questions to our hypotheses; the rest are supplementary ones for purpose of discussion.

. For the two last sets of questions, they are adapted as such that respondents might find it easy to understand and successfully answer the self-administered questionnaires.

We decided to apply Body Shape Questionnaire (BSQ) (Evans *et al.*, 1993) to measure the adolescents concern about their body. The Body Shape questionnaire was created from qualitative analysis from a sample size of 28 people, after the interviews were done the recorded material was transcribed and organized in conceptual categories, then the questions were formulated to reflect the content. The end result was 51 questions derived for a self-report questionnaire of a 6 point Likert scale ("never", "rarely", "sometimes", "often", "very often", "always") (Cooper *et al.*, 1987). We chose to use this scale, however, the shortened version of it, which has been confirmed as reliable by the original authors. The shortened version comprises of 8 questions, where scoring goes from "Never"=1 to "Always"=6. The minimum result would be 8 which is no concern on body shape and maximum would be 48 high concerns on body shape. The breaking points are derived according to the data from the UK, the points might be different for Danish population, due to cultural differences, but we will assume that the culture is not significant. So the breaking points for results are: less than 19 a person has no concern with shape, 19 to 26 a person has mild concern with shape, 27 to 33 has moderate concern with shape, 33 and over a person has high concern with shape. (Evans *et al.*, 1993)

Some of our questions are sensitive (with regards to the issues of behaviour and attitude) as we were cautious that it might have influenced the nature of responses. We reminded the students a couple of times that the survey is anonymous.

It took around 20 minutes for the 7th graders to complete the questionnaires while the 8th and 9th graders took around 10-15 minutes. Such fact suggests that the students' capability respond efficiently and correct improve along with the age. It might be also because they are more experienced in answering questionnaires, and are better at reading more complex statements.

Hypothesis testing

Data collected were examined to identify and confirm relationships (Hair *et al*, 2007). The hypothesis will be tested by SPSS 18 by means of descriptive statistics to get general information around the mean of key variables (BMI, age, height, etc.) and regression to see the correlation between independent variables. In developing and testing our quantitative hypotheses, we did the following steps (Hair *et al*, 2007: 329)

- Stated the null and alternative hypotheses
- Tested whether our sampling distribution of the population is normally distributed, then selected the appropriate statistical test
- Used level of significance of 5%
- Collected data from sample and computed the appropriate test statistic.
- Accepted / rejected the null hypotheses.
- Interpreted the findings

2. Literature Review

In this part, we would like to describe the key issues based on the literatures. Starting from Consumer Behaviour; this thesis will elaborate only on plus-size teenagers' clothing buying behaviour. We are going to analyze their behaviour by means of socio-psychological³ factors

³ Socio-psychological factors- relating to, or involving a combination of social and psychological factors, such as personality, attitudes, motivations and behavior of individual influence. (Marriam-Webster, 2011, <http://www.merriam-webster.com/dictionary/social%2Bpsychology>) Retrieved on 28th April ay 3 pm.

(Solomon and Rabolt, 2004). In this case, we use self-esteem and body image towards preference of shop type.

2.1. Consumer behaviour

Consumer behaviour is a study of how individuals or groups select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires (Solomon and Rabolt, 2004, pp. 23). It is an interdisciplinary study ranging from psychophysiology to literature. We are focusing on the teenagers socio-psychological aspects that drive their buying behaviour, i.e. self-esteem and body image. Although the target group of our study is plus-size teenagers, first we would like to discuss all teenagers as general consumers.

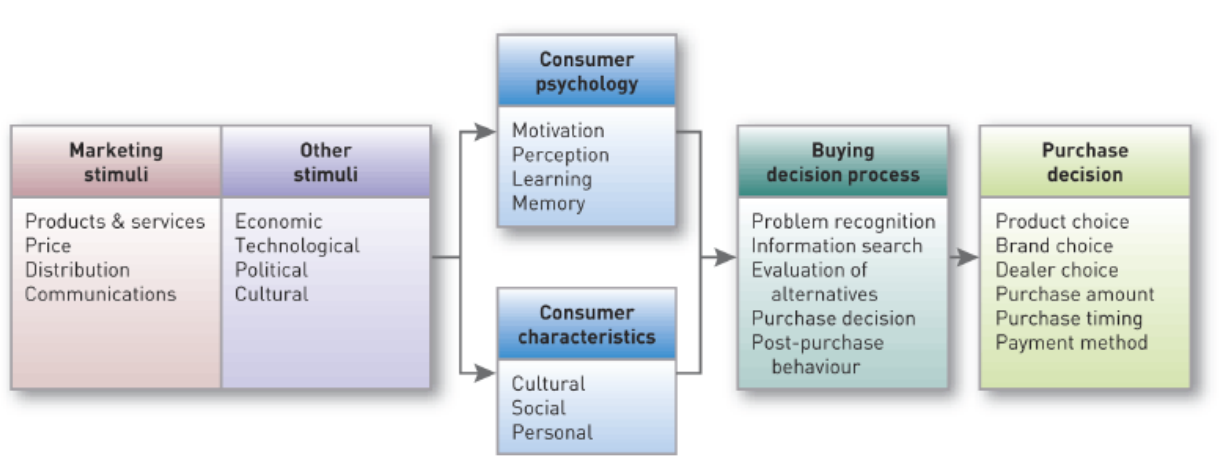
Consumer behaviour is a sequence of problem solving stages:

- The development and perception of a need or want
- Pre-purchase planning and decision making
- The purchase act itself
- Post-purchase behaviour

Suppose consumers go through the above process, it is with certainty that their behaviour is shaped by attitudes, self-concept, general motivation and personality, social class, stage in family life cycle, and the groups to which they belong.

In this study the focus will be mainly on consumer's psychology and characteristics that would evaluate the buying decision process and buying itself. (Foxall *et al.*, 1998) Figure 1 shows how the process of buying decision making occurs. The research was made accordingly to the flow of process in the figure.

Figure 1. Consumer behaviour model.



Source: Ketler *et al.*, 2009, pp.238

2.1.1. Consumer behaviour in fashion

Previous studies exploring the socio-psychological motivations for clothing purchasing found that clothing relates to social participation and group membership (Brock *et al.*, 2009). Choice of clothing plays an important role in adolescents' development, and experiences he/she endures during period of adolescence. Through clothing, adolescents try to communicate with their cohorts, either by distinguish themselves or by assimilating to the group (Zollo, 2004, pp.198). Most teenagers stated that their clothing was inspired by friends. Both girls and boys are highly aware of their friends' clothing choice.

Consumers don't feel and experience the shopping in the same way. Shopping is generally used to combat the boredom or to experience positive emotions. The consumer has social and personal motives for shopping, diversion, physical activity, sensory stimuli. Social motives would be meeting with others, peer group influence and status. (Fenech and O'Cass, 2001) Teens shop with friends more often when they are susceptible to informational influence, or when they feel that friends can reduce the perceived risk by providing the necessary information. Teenagers who enjoy shopping with friends are more likely to spend more money, than if they were shopping

alone. (Mangleburg *et al.*, 2004) Plus size girls said to their mothers that they want to buy clothes at the same stores as they normal weight friends. But due to size unavailability they were not able to do that. (Brock *et al.*, 2009)

2.2. Shopping online

The internet has increased consumers' abilities to be exposed to many reference groups. Virtual communities are made of people who are united under one goal- the enthusiasm and knowledge of a specific product. (Solomon and Rabolt, 2004)

Research on shopping preferences according to gender, find out that males were information hunters, they search for information about the products and services for the best deal available. Males are motivated by the need of achievement, where they find the best deal by use of technology. Females gave priority to possibility to return the bought item, as well as to correct size of the apparel they want to buy and the speed of the services from purchasing to check out in the web site. (Ulbrich, Christensen and Stankus, 2011)

2.2.1. Adolescence and online apparel shopping

This is a first generation that is born where computer is nothing special, and where being online is just as comfortable as being offline. (Lindstrom and Seybold, 2003, pp. 24) this generation is also called Digital Wired, or generation Y, that's teenagers and young people that just entered their twenties. (Solomon and Robotl, 2004, pp. 182) The leading group to use the services that internet can offer for example: socializing, shopping, news surfing and IT, are the adolescent children. The number of hours the teenagers spend has tripled in past 10 years. The teenagers are more skilled at using internet than their parents. Teenagers are assumed to be the best users of the internet within the family. The traditional view of adolescent's consumer behaviour has changed mostly due to the internet, from passive, observant participation it has shifted to learning through discovery and participation. (Kaur and Medury, 2010) Internet has created a

new learning culture, allowing the teenagers to share and influence interactively rather than modelling behaviour and attitudes. Many adolescents see internet as part of their daily existence also at a much higher level than most of the adults have. The internet has become a perfect place for adolescent to explore and discover meanings in consumption without any restrictions. (Lee and Conroy, 2005) Internet is viewed as a place and object of consumption; internet has removed the traditional way of interaction from person to person, to person to machine connection. Lee and Conroy (2005), discovered three themes where internet was treated as an object of consumption, these are: relaxation and escape, source of learning (information) and shopping. Where the first theme one refers to internet being a place where the person can relax and seek entertainment, a place where they can escape from reality. The second theme refers to internet as a source of learning when users interact with internet they surf for information they can gain through various websites, also by downloading files. The third theme, internet is seen as a fun place to do shopping, some even describe the internet as being a better place to do shopping than the physical shop. Main reasons being, that over the internet one can have bigger variety of goods, and also it is seems more economical. Shopping is easier over the net because it removes barriers for comparing prices and brands, you won't be disturbed by shop assistants. Also internet has removed the time and place constraint so the person can shop whenever he feels like doing it from the comfort of their own home. (Lee and Conroy, 2005)

2.2.2. Forces that lead consumers to buy online

Experienced Internet users were buying online more frequently than the new users. Typical internet shopper was defined as adventurous with regard to new ways of shopping and they have already tried home shopping before via other media's. Consumers' perceived risk for shopping is bigger with online shopping than with in-store shopping. (Goldsmith and Flynn, 2004) Also it is seen as more risky than catalogue and TV shopping. (Goldsmith and Flynn, 2005) The perceived risk is high due to the nature of buying apparel itself, person needs to examine the product its fabric, colour, size etc. The fit is seen as very important. (Ha and Stoel, 2004) Besides this negative side the consumers get motivated to shop online because there are plenty of motivation factors that lessen the perceived risk. The strongest of those factors are convenience, value of merchandise, assortment of goods and advantages of shopping from home. (Goldsmith and

Flynn, 2004) Those who buy more clothes appear to be doing it using all three methods (online, catalogue physical store). Higher household income associates with greater apparel consumption, also it is noted that females buy more clothes than males, regardless of any shopping method. Remote users are less fashion oriented (Goldsmith and Flynn, 2005)

2.2.3. Searching for information online

Research by () found out that intention to search the information of the product on the internet might lead to purchase through the same source. This makes the channel by which the information is searched rather crucial for the choice of purchase format. It has been proven earlier that consumers are already using multi-channel combinations to gain best offer.

Online retailer should use their efforts in creating good image of “risk-free” for consumers. It is one of the key strategies to attract the consumers to use the internet shop. Also they should create strategies to reduce consumers’ perceived risk, and encourage repetitive interactions with the internet providers. (Shim *et al.*, 2001)

Consumers search for apparel information online when it is most convenient for them, and then go to physical store to compare and make the final decision. Females were more innovative and used internet for information search more frequently than men did. (Ha and Stoel, 2004)

2.3. Self-esteem, body image and clothing

Self-esteem is only one specific domain of self-concept that has been studied extensively in overweight individuals. (Mendelson *et al.*, 1996) According to George Stone clothing expresses one’s identity. “Whenever we clothe ourselves, we dress ‘toward’ or address some audience whose validating responses are essential to the establishment of our self” (Stone, 1962). The audience provides feedback to the individual who will form self-concept (Kaiser, 1997) as part of their identity. Rosenberg (1965)⁴ defines self-esteem as “a favourable or attitude toward the

⁴ Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

self” (Kim and Lennon 2007). It is often related to acceptance from the surrounding environment. ”Self-esteem is the product of two internal assessments or judgments, the global judgment and one’s self-worth” (Fathi-Ashtiani *et al.*, 2007) Self-esteem is important for individuals well-being (Kavussanu and Harnisch, 2000), also it is considered to be synonymous and to be part of evaluative component of self-concept- a set of self-attitudes reflecting description and evaluation of one’s behaviour and attitudes, (Butler and Gasson, 2005) other closely related concepts of self-esteem are self-confidence or body esteem (body image), (Fathi-Ashtiani *et al.*, 2007) Number of researches show that females tend to have lower self-esteem than males throughout all stages of the adolescence. One of the main reasons for low self-esteem is negative body image, which emerges during pubertal period. (Guindon, 2010).

Physical attractiveness is a critical factor that determines self-esteem, an attribute that is considered crucial by adolescents (Kim and Lennon., 2007). In Self-esteem lies person’s sense of his value, or how much a person likes himself. Persons with high self-esteem are assumed to be more confident of their own judgements, and less subjective to be influenced from other people’s ideas. Also people with high self-esteem tend to think good about themselves and are less concerned about social rejection from others. (Bearden *et al.*, 2001) Also they tend to be more adaptive to different situations, are good at initiating good relations with others, and have an active role in social groups. (Fathi- Ashtiani, 2007) A study of adolescents resulted in high level of self-esteem of those who were satisfied with their appearance and were not afraid to draw attention to themselves through their use of clothing, whereas teens with low self-esteem have been said to have negative development outcomes such as anxiety, depression, academic difficulties, and suicidal behaviours. (Michaels *et al.*, 2007) Also the ones with low self-esteem were likely to have social problems and felt insecure about their appearance. Thus they compensated by expressing their self through clothing to cope with peer groups (Solomon, 2004). Teenagers use social comparisons to evaluate themselves. Those who perceive themselves being below average compared to peers had low self-esteem. (Kavussanu and Harnisch, 2000) Both overweight females and males were more likely to have poorer overall self-esteem and physical self-concept, than their normal weight peers. (O’Dea 2006)

Referring to the introduction part about self-esteem, there are many findings on the research topic (Butler and Gasson, 2005; Fathi- Ashtiani *et al.*, 2007; Guindon, 2010; Kavussanu and

Harnisch, 2000) correlating excessive weight with low self-esteem in US. But some studies in UK shows inconsistent result (Solomon and Rabolt, 2004; Kiess *et al.*, 2004; Griffiths *et al.*, 2010) on the psychological effect of being overweight. In an influencing research about self-esteem and obesity in 1995, it was concluded that obesity has insignificant influence to low self-esteem among children (Nielsen, 2005; French *et al.*, 1995; Gortmaker *et al.*, 1993) Apart from the common mind set, we are required to measure self-esteem.

2.4. Body Image

2.4.1. Social comparison theory

Theory suggests that “propensity to compare one’s physical appearance within the realm of body image, the propensity to compare one’s physical appearance to others moderates the extent to which the pervasive representation of the thin, attractive ideals results in body image attribute”(Cash and Pruzinsky, 2002) researches have shown that people that compare their physical attractiveness with others that they think are attractive, rate their attractiveness lower, than if they had compared it with those they see as unattractive.(Cash and Pruzinsky, 2002) Also the bigger exposure to mass media containing the idealistic body image, the less favourable is the body image evaluation is. (Morrison *et al.*, 2004)

In Western industrialized countries, body image, perception of physical appearance is one of the most important components of an adolescent’s self-esteem. (Solomon and Rabolt, 2004, pp.158) The negative body image is correlated with low self-esteem, depression, fear of negative evaluation and obsessive- compulsive tendencies. (Cash and Pruzinsky, 2002, pp.76-78) Adverse psychological factors such as self-esteem and body dissatisfaction were more common for the overweight than for the normal weight teenagers. It has been proven by one study that “early” maturation and dissatisfaction with body size which leads to low self-esteem. (Meland *et al.*, 2006) Overweight teens had higher level of body dissatisfaction and greater pressure from the parents and peers than the normal weight teens. (McCabe *et al.*, 2009) Body weight dissatisfaction was found to be common among the girls in early adolescents. (Al Sabbah *et al.*,

2009) Also the research with Swedish boys and girls found out that the body-esteem is lower in girls and boys even though the gender equality is high in Sweden. (Frisén and Holmqvist 2010) Same results were found in Norwegian survey for 11-15 year olds (Meland *et al.*, 2006)

Dissatisfaction of body image has been recognized as one of the main factors of anorexia nervosa (fear of weight gain). Body dissatisfaction can be influenced by two factors closely related to one another, the body shape and body size overestimation. (Cooper *et al.*, 1987) There is substantial evidence showing that higher Body Mass Index (BMI) is associated with greater body image dissatisfaction among adolescents. (Fonseca *et al.*, 2009) Individuals with negative body image tend to utilize clothes to change their body's perceived shape. The adolescents undergo profound physical changes that affect their relationships to clothing (Brock *et al.*, 2009). Clothing plays a crucial role in their self-concepts and social interaction. There are socio-psychological motivations underlining clothing purchases. Clothing relates to social participation and group membership.

The increase in weight for pre-adolescents lead to poorer opinions about their appearance, they are susceptible to societal norms for the body image, those that are overweight already start to increase their body dissatisfaction (Mendelson *et al.*, 1996). During their adolescent period, girls gain weight due to natural biological factors. Almost half of the weight is distributed to hips, thighs, buttocks and waist as fat. This moves girls away from their ideal / desired body shape. Opposite holds for boys, when boys mature physically they have a bigger possibility for developing towards their ideal body shape. Some studies revealed that body satisfaction declines significantly during the period of 12-15 years, and then levels off or increases slightly. The transitional process is more stressful for girls than for boys; since girls experience pubertal weight gain, the change of schools, dating etc. Also because they are constantly reminded that they have lower status than men, for example through such reminders as limited options of success in careers and in sports, sexual harassment, etc. All these factors can increase girl's tendency to define herself in terms of the social and economic value of her body. Furthermore, girls' development in adolescence stages is associated with increased body mass, negative body image, and bigger desire to get thinner. There are not so many research made on the development of body image in adolescent boys. (Cash and Pruzinsky, 2002, pp.76-78)

According to Socio-cultural perspective, culture plays a big role when defining a perfect body, and attractiveness is defined by cultural definitions. The closer body self-perception come to cultural ideal, the higher the self-ratings of body attractiveness should be. (Cash and Pruzinsky, 2002, pp. 18)

During early adolescence teens are influenced from a number of external factors such as, mass media, family and peers. All of them have a part to play in a teen's body image development. Some factors distort body image perception. Especially in mass media, where people in advertisements are thin, well- build and are being seen as having perfect body.

2.4.2. Mass media

Mass media are powerful conveyors of socio-cultural ideal. Since media presents the thin body images as the ideal, it has been major contributor for current high levels of body dissatisfaction. Also the ideal body image is presented in a more complex way by media, where thinness and attractiveness are linked to happiness, desirability and status. Media is not only presenting the ideal body image but it also offers instructions how to achieve the beauty ideal, with dieting and exercising. (Cash and Pruzinsky, 2002, 90-93)

Mass media promotes ideal body image in advertisements and results in increasing body dissatisfaction among adolescent children. Girls for example are always struggling to understand what the appropriate body image is for them, because especially in developed countries, teens receive a lot of mixed messages about the weight and the body shape changes. Many adolescent compare themselves with thinner, glamorous women in ads, on TV or online. In most cases it creates a more negative feeling especially if they have already perceived their body negatively. (Cash and Pruzinsky, 2002, pp. 79; McCabe, *et al.*, 2009)

2.4.3. Family

Previous studies show, that parents' attitudes toward their own body image are correlated with body image of their adolescent children. However, the researched model is too inconsistent to support the fact. Parents see their children as being physically attractive, but as girls and boys go

through puberty and become adolescents they receive more criticism about how they look, then the praising which they received when they were younger.

Also in some cultures adolescent children might face teasing and other negative verbal comments from family members that have large consequences in the child's body image development. (Cash and Pruzinsky, 2002, pp. 80)

2.4.4. Peers

The development of good body image is one of the most important topics discussed among friends. A large part of girls occasionally talk with each other about body shape and related topics such as dieting, weight etc. During the exchanges of experience and perception it was noticed that if two girls are best friends, then they will have the same concerns in regards to body image concerns. There is big difference between the male and female peers, males are more likely to make a more edgy, critical comment about weight and shape. (Cash and Pruzinsky 2002, pp. 82) Research indicates that the link between receiving appearance related feedback from peers and the body image dissatisfaction may not be direct. But the perception of peer acceptance can raise concerns about appearance. As previously mentioned girls are more concerned about their body image than boys, they believe that thinness increase likeability among peers. (Cash and Pruzinsky 2002, pp. 110-111; Vincent and McCabe, 2000) Overweight teens reported difficulty in making new friends compared to non-overweight peers. That is why being accepted and attached by the peer group is important for teenagers' development. Overweight teenagers that fail to get social acceptance are more likely to show physical and emotional problems. (Fonseca *et al.*, 2009) Boys on the other hand are more concerned about the negative comments from the peers about their body shape and weight. (Vincent and McCabe, 2000)

2.5. Body image of overweight and obese

Research show that in most cases obesity is linked to poor body image; however, it depends on the degree of obesity. Many individuals believe that people have control over their weight, so the

members of different groups might be willing to blame the overweight or obese individuals for not being able to control their weight. Where in the end individual might internalize the feelings and would blame themselves for the negative comments they would receive from others. (Cash and Pruzinsky, 2002). Lower self-esteem, body dissatisfaction and depressive symptoms were more common among overweight and obese than among normal weight teens. (Fonseca, *et al.*, 2009; Puhl and Brownell, 2001) Being accepted by peer group is crucial for any teen, and those that are more closed in and don't find it easy to integrate socially, are more likely to show difficulties with physical and emotional health. According to Fonseca and *et al.*, (2009) obese teens tended to have lower levels of emotional well-being.

Clothing has been identified as one of the most important contributors for creating better appearance for overweight teens. The choice of clothes varies considerably between darker more loose clothes to help hide their curves, to more trendy clothes. It is assumed that it will help reduce the social marginalization and increase social acceptance that overweight teens might experience. (Edmunds, 2008)

2.6. Weight

Weight has been becoming an obsession among adolescents because their body undergoes many physical changes, e.g. a teenage girl gains almost 35 pounds of reproductive fat around hips and thighs. Culture is one of the main drivers determining the perfect body type, in western countries the perceived "perfect body" type is thin. (Kaltiala- Heino *et al.*, 2003) Advertising and peer groups reinforce the pressure to be slim (Solomon and Rabolt, 2004, pp. 163). They play a significant role in determining the desired form of beauty for that moment. In the end, consumers compare themselves to that standard and become dissatisfied with their appearance. Overweight teenagers are stigmatized across multiple settings and sources ranging from family to teachers. Stigmatization of overweight has increased over past decades. Stigma is more prevalent among girls towards same sex peers than boys. (Latner *et al.*, 2007)

Stigmatization is related to the degree of overweight and gender, also it was noted that girls might start getting stigmatized at a lower level of BMI than boys. (Tang- Péronard and

Heitmann, 2008) Weight measurement is somehow difficult in relation to body fat classification. Many consumers rely upon out-dated height/weight charts because they do not take into consideration important factors such as age or activity levels. Referring to a book 'Obesity in childhood and adolescence', it discusses how to define obesity in children and adolescents (Kiehl *et al.*, 2004). General BMI measurement is not applicable because body fatness has been shown to vary by age as well as age-related change in height. During adolescents' period, height increases rapidly as well as body composition. Therefore classification of overweight/obesity by a single measure is difficult.

In defining / categorising weight into 3 groups: underweight, normal weight, and overweight, we apply 'BMI for age'. Comparing to general BMI calculation (weight/square of height in meters) which is proven to be reliable measurement for adults, it doesn't work perfectly when analysing body fatness of children. That is why for weight measurement we used BMI-for-age, which is age and sex specific. We apply the measurement specifically for age and sex, because amount of body fat changes the older the child gets as well as the amount of body fat differs between girls and boys. After the calculations were done we plotted it according to cut-off points on BMI-for-age growth charts to gain a percentile ranking. The percentile indicates the relative position of the same sex and age. BMI-for-age can be placed in four weight status categories: underweight- less than the 5th percentile, healthy weight- 5th percentile to less than 85th percentile, overweight – 85th to less than the 95th percentile, Obese – equal to or greater than the 95th percentile (Centers for Disease Control and Prevention, 2011).

2.7. Brand

Brands play important role in teen's life, BRANDchild survey revealed that familiar brands offer security and framework to their world. Brand functions also as a symbol for teens identity, which makes them feel trendy, cool, rebellious, and stylish. Also brands have become a way teens define themselves; it's the way they express who they are, as the survey revealed that brand label was more important than the clothes; it is the choice of brand that distinguishes them from one another. (Lindstrom and Seybold, 2003, pp. 18-20; Martin and Bush, 2000)

Brand loyalty hardly exists during early adolescent years, because of the peer pressure and the need to fit in to the group. Teens tend to follow the group trend to get social acceptance that means choosing the brands that appeal to the whole group. When they get older they develop the feeling of individuality and autonomy. There are 3 main reasons identified why their choice of brand changes so often:

1. Teens are subject to change their brand association more than adults due to high peer pressure.
2. They grow through brands, meaning that when they mature their preference of toys, magazines changes on a yearly basis.
3. They are influenced by marketing tactics thus, that make them change their brand preference. (Lindstrom and Seybold, 2003, pp 52)

Teens are influenced by direct (parents) and indirect (athletes, entertainers) to switch or change the brand preference. (Martin and Bush, 2000)

2.7.1. Brand vs. No brand

Buying branded clothes is considered important to demonstrate that the teenager is not poor, also it is used to following general trends in school. (Piacentini and Mailer, 2004) When given a chance to choose a t-shirt 98% of time, teens will prefer to choose one with a brand name or logo, slogan. Plain t-shirts with no brand name, picture or logo were perceived as boring. Teens would like to have a t-shirt that will express who they are, that will make them stand out from the crowd. Teens focus much on how their favourite t-shirt relates to self-image. . (Lindstrom and Seybold, 2003, 112-113)Clothing was found to be used for making a positive first impression. Some feel that clothing provided a lot of useful information in some way. (Piacentini and Mailer, 2004) However, research by Martin and Bush, (2000) find out that even though brand was considered important it ranked the last in their list of attributes for shopping for clothes. The 3 most important factors when choosing clothes to buy were size, look and style.

2.7.2. Brand as a partner

Human activity of anthropomorphizing inanimate objects is identified as a universal in almost in all societies. Consumers are constantly assigning personality qualities to inanimate brand objects, by making them more personal: treating brands as human characters, or creating brand identity in order to articulate their own relationship views. (Fournier, 1998)

Brand and person relationships add and structure meanings in person's life. There are 3 contexts shaping the significance of the relationship for the person: the psychological, the socio-cultural and relational.

The psychological context can be mapped in a given relationship when the identity activity is specified in which relationship is grounded. Relationships may help resolve existential concerns or tension – life themes that person experiences daily. Life themes are deeply rooted in personal history and are important to core concept of one's self. A relationship may also deliver on important life projects and tasks. Life projects involve the construction, maintenance, and dissolution of roles that shape one's concept of self, such projects can be role-changing events (e.g., graduation from high school, university), age-graded undertakings (e.g., retirement), or stage transition (e.g., becoming 18 years old). (Fournier, 1998)

There are 5 socio-cultural contexts creating relationship behaviours and attitudes: age, life cycle, gender, family, and culture. Previously mentioned contexts influence the strength of relationship drives, the types of relationship desired, the experience of emotional expression, styles of interacting within relationships. (Fournier, 1998)

The relational context says that when considering single relationship one must also consider the networked nature of the phenomenon. Relationships exist in the context of other relationships. (Fournier, 1998)

2.7.3. Brand in apparel

Clothing has been identified as one of the most important means to gain social appreciation and create positive self-esteem for adolescents. Teenagers that follow the clothing norms of a group are more likely to be accepted to the social environment than those that prefer their individual style. Brands can be used as an instrument to help the adolescents' to gain acceptance in peer groups. Brand sensitivity⁵ is seen as a result of learning acquired through interaction between the learner and the socialization agents. The three main socialization agents were parents, peers and television, which represent most of interaction the learner experiences. (Lachance *et al.*, 2003)

Parents influence on clothing purchasing decision declines when adolescents get older and peers influence increases, however media in both cases plays minimal role. Parents can affect teenager's expressive aspects such as social and materialistic motivations to consume, the preference for brands. Parents are looked upon as role-models that are usually imitated, that is why teenagers perceive parents as influences on their clothing choice in their pre-adolescent period. (Lachance *et al.*, 2003)

Recognition of brand names in apparel can be part of social interaction process, even as part of peer acceptance (Lachance *et al.*, 2003) Peers' influence has been identified as the most important factor influencing adolescents brand sensitivity development for clothing. Adolescents acquire expressive aspects of consumer behaviour from their peers by creating consciousness of the product social value. Adolescents pay a lot of attention to brands as part of their expressive learning. Peers have high influence in buying decision making for clothes, choices or satisfaction. Adolescents' satisfaction of clothing patterns occurs within social interactions and is quite important factor in peers' acceptance. (Lachance *et al.*, 2003; Piacentini and Mailer, 2004)

Television as a socialization agent influencing the choice of brand for apparel purchase has not been examined so much. However, there is no doubt that TV affect teenagers attitudes such as craving for product and brand preference. (Lachance *et al.*, 2003)

⁵ Brand sensitivity- is a psychological construct that refers to the buyer's decision making process. If a person is brand sensitive means that brands play an important role in the psychological process of that precedes the buying act. (Lachance *et al.*, 2003)

3. Results

3.1.Preliminary analysis

3.1.1. Sample

Participants were 144 teenagers between the age of 13 to 17 years old (Mean of age = 14,67; SD = 0,932). Majority of sample are Danes with only one or two pupils with minority ethnic background. The self-reported height of respondents in average is 171 cm and weight is 58,95 kg. Based on height and weight, BMI is calculated as weight multiplied by squared height in cm for each respondent. From the means, the calculated BMI shows that in average the pupils have normal weight. The BMI cut-off points are gender and age specific (Kiess *et al.*, 2004) in order to derive more relevant value than the general BMI calculation. For cut-off points see appendix 1.

BMI for the respondents as shown in table:

Table 1. Age * BMI_{total} Crosstabulation

	BMI _{total}			Total
	Underweight	Normal weight	Overweight	
Age 13	1	11	1	13
Age 14	4	27	4	35
Age 15	2	42	6	50
Age 16	1	17	2	20
Total	8	97	13	118

The results of weight distribution were quite similar to the national weight distribution for overweight teenagers. According to national statistics 12% of teenagers are overweight, 77% are normal weight and 11% are underweight. Our results show that 11% are overweight, 82% are

normal weight and 7% are underweight. (Temarapport om born og overvægt, 2010) Most respondents are 15 years old, however, the largest numbers of overweight teenagers were recorded in age group of 14 and 15 years.

Shops preferences

Based on gender and age cross-tabulation, the respondents prefer physical store with significant differences of 111 respondents out of 134. (See Table 2) Overall largest part of total sample (82,8%) chose physical store as their primary choice for clothing purchasing. Only small part of population was buying clothes online, or using multichannel means to acquire best deal. Age group which was buying most online were 15 year olds.

Table 2. Age * Preference Crosstabulation

	Preference			Total
	On the Internet	Visit physical stores	both	
13	2	11	2	15
14	1	36	3	40
15	8	44	3	55
16	2	18	2	22
17	0	2	0	2
Total	13	111	10	134

3.1.2. Brand preferences

Based on gender and age cross-tabulation, respondents stated that brand is the least important compared to size, price, and style. More than 70 % of population did not think that brand was important for them when choosing piece of clothing. However, there still was considerable number of respondents (around 30%) that said brand was important or very important. Such preference was visible in youngest age groups (13-14 year olds).

Table 3. Age * by Brand importance for clothing purchase Crosstabulation

	Brand importance for clothing purchase				Total
	Very important	Important	Less important	Least important	
13	0	6	7	2	15
14	2	12	20	6	40
15	5	11	27	12	55
16	3	5	8	6	22
17	0	1	1	0	2
Total	10	35	63	26	134

3.1.3. Hypothesis testing

H1: Size unavailability makes overweight teenagers choose online stores

We wanted to compare how size unavailability affects overweight teenagers' choice on clothing stores. Assuming that normal weighted teenagers can easily find clothes of their size in physical stores, we believe that overweight teenagers cannot always find theirs. The unavailability makes them uncomfortable, and that is the reason why they search their clothing in the Internet. To find out if it is true, the test comparing BMI of teenagers with different preferences was carried out. If more overweight teens actually prefer online shops because they cannot find the right sizes in the physical ones, we will be able to see it from the test. In this case mean BMI will be unequal across 2 groups (teenagers who prefer online shops and teenagers who prefer physical ones). If there is no difference for overweight people where to shop, then means should be equal.

To run the test some assumptions must be fulfilled. Population must be at least 20 times bigger than the sample, samples variance must be homogeneous, and the population observations must follow a normal distribution. For the test all of the assumptions are fulfilled. The population distribution is checked by sample distribution, which is approximately normally distributed. The Lavene's homogeneity test is not significant (p -value = 0.353). This show the samples have homogeneous variance.

The means of samples are almost equal - 20.0431 and 20.0493. The t-test confirms our conclusion. Test is highly insignificant with p-value being close to 100%. We fail to prove that they differ. It means there is no difference in BMI among teens who prefer to buy online and in physical stores. Size unavailability is not a factor which makes teens choose online stores.

While the t-test of means shows obviously that there is no difference between BMI of those who prefer physical and internet stores, the closer look into distribution of teens reveals a slightly different pattern. When looking at normal-weight teens only, 16.5% of them prefer buying clothes online. If we isolate overweight teens we can see almost a double increase in the number - 30.8% of overweight adolescents would choose online store over a physical one. Still, the majority of overweight students prefer physical stores (9 of 13), but the increase going from normal-weighted to overweight is obvious.

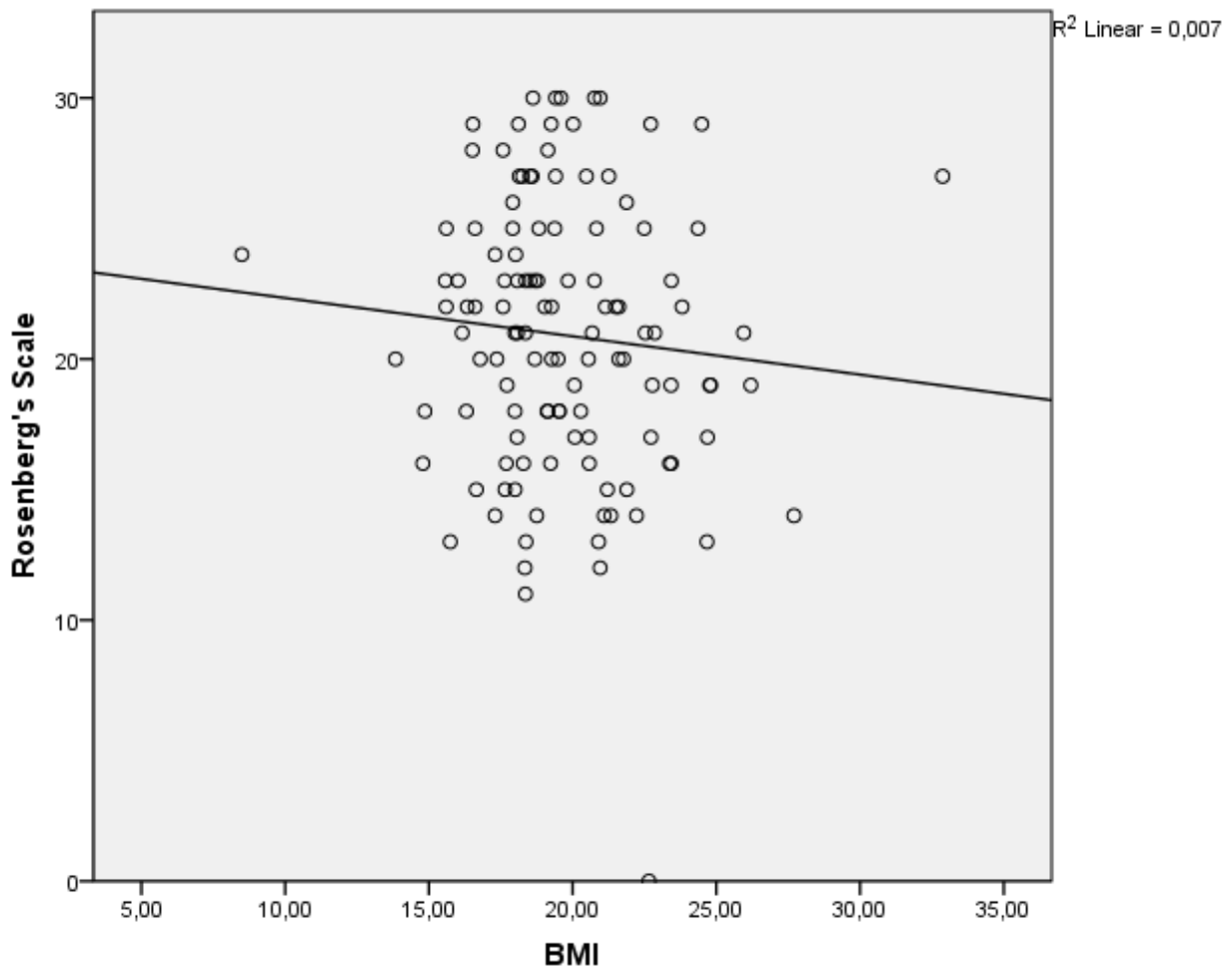
The t-test of means fails to see the BMI difference because there are too little overweight teens in the sample. Only 20% of those who prefer online stores and only 10% who prefer physical stores are overweight. Many normal-weight teenagers also like buying online and they pull the BMI mean downwards. To conclude this hypothesis, overweight teenagers prefer online stores better than normal-weight teens, but nonetheless they still like physical stores better.

H2: Low self-esteem increase preference to buy online

Figure 4 shows that weight does not influence teenagers' self-esteem; however it still shows that teenagers BMI might be influencing their self-esteem to a minor extent. The results show that largest part of population has medium to high self-esteem.

With total sample of 136, we run a descriptive statistics about self-esteem split by preference to buy clothes online. Teenagers that prefers to buy clothes online have higher self-esteem (M=22.80) compared to those that prefer physical stores (M=20.45). Then we run a T-test to check whether there is any difference in self-esteem between teenagers that prefer online stores and physical stores. As the variances are equal, with t-observed of 2.218 and p-value of 0.028, the test shows that self-esteem of teenagers on those preferences is equal.

Figure 2. Body Image to BMI scatter dot plot.



Low self-esteem should decrease the willingness to go to physical clothing stores, hence increase preference for online stores. We have made two distinct samples reflecting teenagers' self-esteem which is measured in Rosenberg's Scale. Teenagers in the first sample prefer buying online (25 observations), in the second sample they prefer offline shops(111 observations). The means of the groups are 22.8 and 20.45 respectively. The results were surprising. It is the other way around the hypothesis was made. The difference between the means is 2.35 which seems sufficient, but nonetheless we have checked the significance by conducting a t-test.

Before running the test we have checked the assumptions of normality and homogeneity. They are fulfilled. Then we ran the test and it confirmed the difference. The hypothesis of means being equal was rejected at 5% significance level (p-value=2.8%0). Teenagers who prefer buying

online have higher self-esteem than those who prefer physical stores. This is an interesting conclusion.

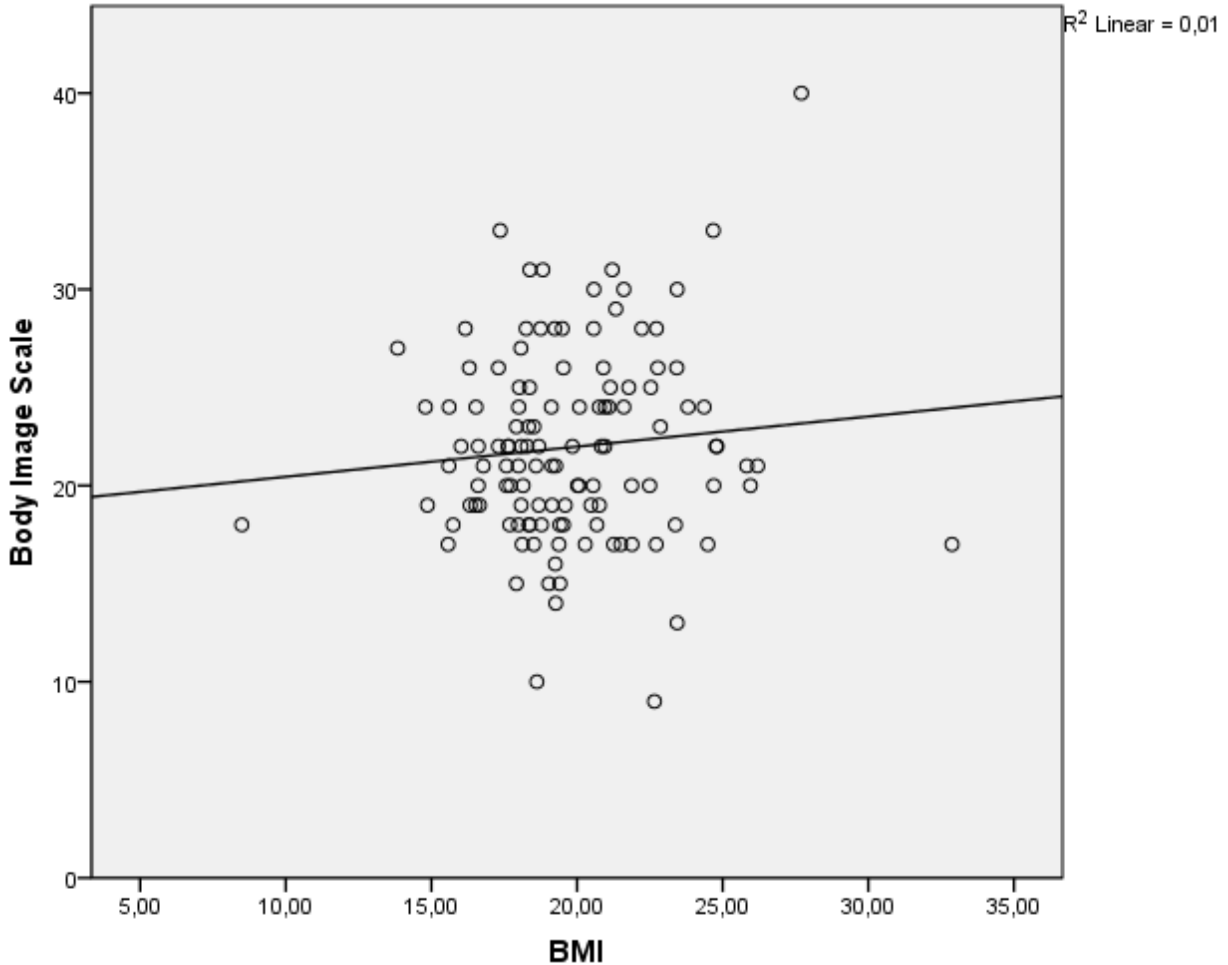
H3: overweight teens rate their appearance not as attractive as the normal-weight teens

The appearance is expressed in a value on a Body image scale. The lower is the value, the lower the concern about their body, hence the higher the rating. From the data collected the lowest average concern about appearance was found at underweight teenagers. They had the mean value of 21.00. Normal-weight teenagers reported to have an average concern of 22.09 and overweight teens have averaged to 23.15. The lowest values were observed for normal-weight students. However some of them also have higher concern and so the average is higher than underweight student's. Overweight students have the highest concern on average, but this value would be much lower if we omitted one observation which scores 40. This one observation drives the mean upwards highly, because we have a small sample of overweight students (13 observations). Excluding this student the average is only 21.75 which is even lower than the normal-weighted teenagers'. The values are similar, but for t-test we have chosen not to omit any values and see if there is any significant difference between their rating of appearances.

Descriptive statistics of Body Image Scale split by BMI categories of underweight, normal weight, and overweight was assigned and it shows that concern about body image relates positively with the BMI although the Means are still in 'Mild concern' category. (see Figure 5.) It might due to diverse opinion about body image among teenagers with higher BMI.

The t-test of means was conducted after checking for the assumptions, just like in previous tests. The test cannot conclude that there is any difference in perceived self-appearance between normal-weight and overweight students. It strongly rejects the equality (p-value = 45.2%). T-test concludes that overweight teenagers have higher concern about body image than the other party. However, the difference is insignificant.

Figure 3. Body image rating according with BMI



H4: Overweight teens prefer branded clothes more than normal-weight teens

Q5 (brand) and Q9 are the key variables for the testing, but we use Q9 only because it is more plausible. Q5 is a mix measure of respondents' attitude towards size, style, brand and price. Q9 measures only respondents' to brand in 5-point Likert scale by mentioning 'Brand is important for me when I buy clothes'.

From cross tabulation of Q9 with BMI, adolescents of normal weight & overweight are mostly indifferent with brand, but 4 overweight teenagers out of 13 are agree with the statement. It makes the above conclusion slightly insignificant.

From T-test, we cannot reject H₀ which means that brand importance between normal weight teenagers and the overweight ones is equal. Though the Mean is slightly different by 0.14, it is too small to conclude there is a difference of brand importance between those two groups.

To prove the assumption we use the answers about how important a brand is for the student. Low value stands for very important, high value for highly unimportant. Again, we have two samples - one of overweight students (13 observations :() and of normal-weight students (97 observations). It is hard to see any difference between the samples from the frequency table, but it is clear that most of the students, in both samples, are indifferent about brand. The mean calculation shows that overweight students on average answered a little bit more positive about brand importance. Their mean value was 2.54, normal-weight teens averaged to 2.68.

The samples fulfil assumptions for a t-test of means. The t-test states there is no significant difference between the samples (p-value = 58.8%). The hypothesis that overweight teenagers prefer branded clothes more than normal-weight teens is rejected.

H₅: They prefer to buy desired branded clothes online

This hypothesis are based on Q21 (which brands are your favourites when buying clothes online) and Q22 (how many of the last 10 pieces of your purchase have the above mentioned brand(s)). Unfortunately, the variables have too many missing cases. It might due to the respondents' preferences of physical stores to online shops (result of testing H₁). That is why they did not answer the questions.

This hypothesis put the emphasis on purchasing branded clothes from online shops. It differs in measurement (independent variables) from H₁ (size unavailability) & H₂ (self-esteem), but has the same independent variable, i.e. behaviour in shopping clothes online. Since H₁ & H₂ are not fulfilled, that the adolescents still prefer physical stores, we thereby reject this hypothesis. Interestingly, teenagers who rate brand as being more important than other criteria when choosing clothes, buy fewer clothes online instead they choose physical store for their purchases.

4. Discussion

4.1. Self-esteem & Body image

The original purpose of the study is to learn about adolescents' buying behaviour, especially of the overweight ones, whether they prefer to purchase apparel from online shops, due to possible negative socio-cultural factors. When conducting the study, main focus was put on two socio-psychological factors: self-esteem and body image. Both of these factors were identified as playing important role for overweight and obese adolescents' personal development as well, they have been part of tools that increase social acceptance and self-esteem among peers. (Lachance *et al.*, 2003; Mangleburg *et al.*, 2004)

Consumer behaviour is an interdisciplinary study, including psychophysiology. The focus was on the teenagers' socio-psychological aspects that drive their buying behaviour, i.e. self-esteem and body image. Lower self-esteem, body dissatisfaction and depressive symptoms were more common among overweight and obese than among normal weight teens. (Fonseca *et al.*, 2009; Puhl and Brownell, 2001) It is a sequence of problem solving stages; this study tried to explain the third stage (the purchase act) in relation to their self-esteem, and possible outcomes in further phases (See Figure 1. In the beginning of the paper). Our test result suggests that our respondents' behaviour is not affected either by the self-concept or by the groups to which they belong to.

The quantitative methodology was applied in this study. Our results suggest that self-esteem among overweight teenagers is not significantly low to be influencing the shopping behaviour of the overweight teenager. Descriptive statistics of Rosenberg's scale of two groups tested (online shoppers & physical store shoppers) shows that the mean still lies in the normal range of self-esteem (15-25). T-test confirms the point, that self-esteem of teenagers of the two groups is equal. One hypothesis assumed that low self-esteem should decrease the willingness to go to physical clothing stores, because of psychological implications, hence increase preference for online stores. But the result is the other way around; teenagers who prefer buying online have higher self-esteem than those who prefer physical stores. (See Table 4)

Table 4. Shows the average of self esteem and body image for the shop preference.

	Self-esteem	Body Image
Preference: Online shops	22.80	20.73
Preference: physical stores	20.45	22.58

The finding contradict some of previous study (Kim and Lennon, 2007; Butler and Gasson, 2005; Fathi-Ashtiani *et al*, 2007; Guindon, 2010; Kavussanu and Harnisch, 2000), but also confirm some studies (Flodmark, 2005; Kolotkin *et al.*, 2001, Kiess *et al.*, 2004; Niclasen, 2005).

In order to measure body image, another quantitative scale was used. Body Shape Questionnaire was applied to analyze the teens' concern for their body image. The result suggests that the concern for body image increases for all three weight categories underweight, normal weight and overweight. The results are consistent with previous researches (Mendelson, *et al.*, 1996) Even though the increase is still small and it lies in category of mild concern. Thus, we cannot significantly that overweight teenagers have negative body image towards their weight.

Physical attractiveness is a critical factor that determines self-esteem, an attribute that is considered crucial by adolescents. In self-esteem lies person's sense of his value, or how much a person likes himself. Persons with high self-esteem are assumed to be more confident of their own judgments, and less subjective to influence of others' ideas. Also they were less concerned about the social rejection by others (Bearden *et al.*, 2001). Almost all of our respondents showed normal to high, high self-esteem disregarding their weight group. (See Figure 2. from previous part) Self-esteem did not go down as was anticipated. The trend, however, still remains negatively correlated with the weight as it was confirmed in previous researches. (Mendelson *et al.*, 1996; Perrin *et al.*, 2010; O'Dea, 2006)

In the developed countries, body image, perception of physical appearance is one of the most important components of an adolescent's self-esteem. Dissatisfaction of body image is correlated with low self-esteem, depression, fear of negative evaluation and obsessive-compulsive tendencies (Cash and Pruzinsky, 2002, pp.76-78). Overweight teenagers had higher levels of body dissatisfaction and greater pressure from the parents and peers than the normal weight teens. (McCabe *et al.*, 2009). The research with Swedish boys and girls found out that the

body-esteem is lower in girls and boys even though the gender equality is high in Sweden. (Frisén and Holmqvist, 2010)

Teenagers are influenced by number of socio-cultural factors from the early age, these factors are: mass media, family and peers. All of them have a part to play in a teen's body image development. Some factors distort body image perception. Especially in mass media, where people in advertisements are thin, well- build and are being seen as having perfect body.

There has been evidence showing that there is correlation between Body Mass Index (BMI) and body image dissatisfaction among adolescents. (Fonseca *et al.*, 2009) Individuals that have high body dissatisfaction try to use clothing to increase their body image and blend in with social groups. Clothing plays a crucial role in their self-concepts and social interaction. There are socio-psychological motivations underlies clothing purchases. The findings were inconsistent with the previous studies, teenagers in this research perceived their body image positively. Even though there is slight negative trend following the findings of previous researches, it is insignificant.

Previous researches show that there is a link between overweight and poor body image. Many people tend to believe that overweight or obese people have control over their excess weight and that they can fix their weight status anytime. Members of social group, that overweight teenager or adult is in, might give negative comment about the weight, in the end person might internalize the feeling and might blame himself for the negative comments he is receiving. (Cash and Pruzinsky, 2002) Being accepted by peer group is crucial for any teen, and those that are more closed in and don't find it easy to integrate socially, are more likely to show difficulties with physical and emotional health. According to Fonseca *et al.*, (2002) obese teens tended to have lower levels of emotional well-being.

Clothing has been identified as one of the most important contributors for creating better appearance for overweight teens. The choice of clothing varies a lot from dark loose clothes which help show less wrinkles, to trendy more expensive or more approved by the majority of the social group. Clothing is assumed to have a lessening factor for social marginalization. Clothing will reduce stigmatization or even create the social acceptance of the group. (Edmunds, 2008)

Plus-size teenagers in Denmark do not necessarily have low self-esteem or feeling stigmatized because of their body by the environment. That is due to Welfare economy and equality which is highly predominant not only in Denmark, but in other Scandinavian countries as well. (Lindström and Eriksson, 1993) More about the two factors will be explained later on.

4.2.Brand, online and physical shops

This generation of teenagers is the first computer generation (Lindstrom and Seybold, 2003, pp. 24) and teenagers are more skilful at using the internet and computer (Kaur and Medury, 2010) most of them still prefer the physical store over the online store for buying clothing.

During their shopping tour almost 40% of teenagers indicated that they usually spend 600-1000 DKK, around 35% said they spend between 0-600 DKK. Also surprisingly there were 20% of teenagers who said they spend between 1001 and 2000 DKK. Another interesting fact is that almost half of the teenagers were using parent's credit card to buy clothes. Apparel shops should take into consideration that teenage spend considerable amount of money and are just as valuable as older consumers and their consumption is increasing each year. (Brock *et al.*, 2010; Mangleburg *et al.*, 2004)

Overweight Danish teenagers still prefer to visit physical stores (9 out of 13 teenagers). The sample of overweight teenagers was too small to make a strong conclusion; nonetheless from the sample we had it was evident that the overweight teenagers preferred buying clothes online more than their normal weight counterparts. At the same time overweight teenagers were still using the traditional- physical stores to acquire clothing. When looking at the sample as a whole, there was small number of teenagers buying online, or using both online and physical store to gain best offer. When asked for the size availability 40% of respondents said that they could not find the right fit each time they visited the store. Surprisingly bigger part of those 40% worn S and M size clothes, which should be available in all stores. The solution to size availability problem was to search in another shop (47% of population) or try searching both online and offline (49, 4%).

Even though, teenagers of all weight groups preferred to visit physical store, they did not reject the idea of buying clothes online sometime in the future, around 45% said they are interested or very interested to buy clothes online.

Teenagers usually shop with parents (33%) or with friends, peers (33%). The results show almost the same division of the preference to shop with as in previous researches (Mangleburg *et al.*, 2004; Zollo, 2004, pp.181-183), however, the teenagers are in the changing stages where they start to gain independence from parents- their previous role models and try to fit in the peer group, to gain social acceptance. Friends, peers preference will grow the older the teenagers will get. (Cash and Pruzinsky, 2002; Vincent and McCabe, 2000). Research by Tootelian and Gaedeke (1992), found out that 59% of teenagers shopped with their friends and only 17% shopped with their parents.

Brand was ranked last along the 4 criteria (brand, price, trendiness, size) teenagers took into consideration when buying clothes, most important of them being the size, followed by price. The findings do not support previous researches (Lachance *et al.*, 2003; Piacentini and Mailer, 2004) about brand importance for social acceptance and creation of positive self-esteem. There was no significant difference between the overweight and normal weight teens for brand preference. When the means of two groups were compared, the overweight teens felt that brand was a little bit more important than their normal weight counterparts; however, the difference was too low to see any significant change. The overweight teenagers didn't use the specific brand to gain acceptance in to social groups. They did not personalize with the brand, did not "make it their own" for expressing their personality or show their independence.

Most popular brands among the teenagers were ranked in descending order: G-star, Humör, H&M, Hummel and Vero Moda. Most of these brands are quite expensive, and some do not target young teenagers, and young shoppers. For example G-star and Humör primarily focus on selling clothes to old teenagers or young people in their twenties. The results show that teenagers want to be older and dress like older teenagers. The age aspiration can be seen influential in the early adolescence, when teenagers hit pubertal period and they see older adolescents having more freedom, and having everything sorted out. (Zollo, 2004, pp. 48-51)

4.3.Socio-culture of Denmark

One of the reasons why our results did not correspond to existing literature is because of the cultural differences, between our sources and Danish society. Socio-cultural factors provide partial explanation for the presence of self-esteem among overweight people (Perrin *et al.*, 2010). In Denmark, everyone is entitled to social benefits (The Scandinavian welfare model, The Royal Danish Ministry of Foreign Affairs). Some major municipalities have service centre where residents can receive guidance and advice concerning the Danish legislation as well as doing variety of social activities such as events for families, children, and sport or cultural ones. (Wise, 2011)

Most of the sources used in the research are from United States- culturally heterogeneous country compared to Denmark. Danish culture promotes equality, when children are born they are taught to treat others on equal rights as themselves. Also they are taught that other person is just as good as he is, so there is no need to make oneself stand out from the crowd. Denmark is presented as a country where social-class distinctions almost do not exist. Equality is one of the most important values of the society that is one of the reasons people pay little attention to rank and status. (Ladegaard, 2010) That is highly influenced by Jantelov (Jante law).

Danes are found to be proud of their modesty; the only thing they wish is modest amount of money and a family. Danish people follow the Jante law also known as the unwritten law. This law states that one should not rise above the others. That is why Danes rate the universalism values higher when compared with the Americans. Even though Denmark is considered as individualistic country, the power distance is rather horizontal unlike in the USA. One of the reasons for that is because of the welfare economy.(Nelson and Shavitt, 2002)

4.4.Quality of life

The concept of Quality of life (QOL) has not yet got generally accepted definition. A study about QOL among children in Scandinavian countries has tried to define it as the essential resources of a child population, expressed in external, inter-personal and personal condition (Lindström, 1993). Furthermore, according to Centers of Disease Control and Prevention, QOL

is a broad multi-dimensional concept which key aspects are health, jobs, housing, schools, the neighbourhood, culture, values, and spirituality.

As one of key aspects of QOL, health is seen as multidimensional construct that includes physical, mental, and social domains. According to CDC, HRQOL has developed gradually since 1980 to embody the above mentioned QOL's aspects which definitely affect health, either physical or mental. WHO defines HRQOL as an individuals' QOL associated with their physical, mental and social well-being (Tsiros *et al.*, 2009). Denmark has scored at the top of EU 25 in the Quality of Life index. (Somarrriba and Pena, 2009) In USA, HRQOL is assigned as national health standard (CDC report). It is important to track HRQOL as it is related to self-reported chronic diseases (diabetes, breast cancer, arthritis, and hypertension), and their risk factors (BMI, physical inactivity, and smoking status)⁶. In this study, we include QOL as one of our theory backgrounds because QOL and self-esteem is often used in research about obesity (Flodmark, 2005; Griffiths *et al.*, 2009).

Measurement of HRQOL can be done in general by a set of questionnaires named PedsQL (the Child Health Questionnaire) or by condition-specific questions named IWQOL (Impact of Weight on QOL). The general one is a modular approach to measuring HRQOL of healthy young people as well as those with acute and chronic health conditions. The later one has 2 types, for adults (IWQOL-Lite) and adolescents (IWQOL-Kids, for adolescents aged 11-19).

There are many previous studies relating QOL with self-esteem and obesity (Tsiros *et al.*, 2009; Lindström and Eriksson, 1993; Flodmark, 2005; Griffiths *et al.*, 2009). Tsiros *et al.*, 2009 concludes that HRQOL plays an important role when evaluating health of obese children. A study conducted in Sweden revealed that high self-esteem was common among obese children due to good QOL (Flodmark, 2005). Low self-regard and impaired QOL increase risk of obesity among young people, particularly in their perception of physical appearance (Griffiths *et al.*, 2009).

⁶ (HRQOL)

HRQOL. (u.d.). retrieved from on 14th April. CDC: <http://www.cdc.gov/hrqol/concept.htm>

The Strengths in our study include the primary data from our survey, which represents the total population of Danish teenagers. From self-reported height and weight, BMI was calculated and resulted in normal BMI (82% of sample are in that category). Self-esteem and body image were also measured separately by set of questions designed for each measurement. The result shows healthy relation of BMI to self-concepts domain. Although obese, teenagers still have normal self-esteem and show mild concern about their body. The results are unexpected due to the fact that the teenagers have a high quality of life.

4.5.Implications

The research raised some questions, concerning the Danish society, as well as, gave some valuable data that could be used for future research.

Interestingly the assumption from previous researches from for example the USA and the UK do not hold. The correlations of the body image dissatisfaction with BMI should be positive, but there is some unidentified factor influencing the correlation which is rather stable with small positive trend. The same goes for self-esteem which remained rather stable throughout the whole sample, with small negative trend. We assume cultural factors have influence over the body image and self-esteem. It would be interesting to investigate cultural background of overweight and obese children in Denmark, to find out to what extent they are influenced by socio-cultural factors.

Also at the moment children are not interesting in buying online. However, there is still room to investigate what can make them make choose online shop over the physical. As they indicated they would like to try internet shopping later on.

Furthermore, there is small part of sample using multichannel (offline and online shop) to acquire best offer. Question would be: How can multi-channel shop best improve the synergy between offline and online to make it more attractive for teenagers?

4.6.Limitations

The research only explores small sample of the total population, the sample was not chosen randomly. The sample size of the overweight teenagers was too small to conduct a good research. For future researches the sample size should be increased to make stronger conclusions. Also the sources (Kiess *et al*, 2004 vs. CDC) determined the overweight and obese teenagers differently, there was inconsistency between two sources, in the end the first one was chosen.

So far we have used many sources from the USA which show positive relation of BMI and self-esteem for overweight teenagers. On the contrary, our research was based on Danish population, which did not show the same relation as the American one. Also there is lack of literature sources that have previously researched the clothing buying behaviour of overweight teenagers.

There might have been some bias in results of the questionnaires as the teenagers can easily falsify the data, write the answers that actually are made up. Also not all respondents answered the weight and height questions at the end of questionnaire.

Another prevalent factor is cultural bias, were most literature state that teenagers should feel bad about their body image or have low self-esteem, it is not evident in the Danish society. It also was found in research with overweight Swedish teenagers, that they had high self-esteem.

We need a follow up study using a combined methodology (questionnaire and interviews). Method triangulation of qualitative and quantitative method might suffice the methodology for the next study. It is necessary in order to obtain more valid data. A preliminary research based on qualitative method would be added in research design. Qualitative method is needed due to the fact that we were not able to find any empirical data about overweight Danish teenagers' consumption behavior for literature.

The future preliminary interview (pretest) would more or less discuss about the questions from our present survey. Responds obtained would be coded and analyzed. Then quantitative method would be assigned by designing a new set of questionnaire based on the finding from the preliminary research. Then a pilot testing would be conducted on a small sample of respondents to identify and eliminate potential problems. The step would be necessary to improve the questionnaire in order to enable us reach better and strong conclusion.

5. Conclusion

The purpose of this study was to examine *plus-sized* Danish teenagers' buying behaviour whether they were reluctant to visit physical stores due to low *self-esteem* and *buy their clothing online*. In finding answer to Research Question 1: does weight influence plus-size teenagers' preference of stores, size and self-esteem were utilized as the indicators. Almost all respondents showed normal to high self-esteem disregarding their weight group. Based on Rosenberg's scale correlated with BMI, self-esteem did not go down as was anticipated. The trend, however, still remained negatively correlated with the weight.

Overweight teenagers were assumed they would prefer online clothing stores due to their body size. The test results suggested that respondents' behaviour is not affected either by the self-concept or by the groups to which they belong to. Self-esteem of overweight teenagers was not significantly low to influence the shopping behaviour. Furthermore, the result showed that teenagers who preferred to buy online had higher self-esteem than those who preferred physical stores.

Next, Research Question 2: do overweight teenagers perceive their body image negatively – utilized Body Shape Questionnaire as measurement of the teenagers' concern on their body. Despite previous researches that link of the overweight teenagers and poor body image was correlated, the test result suggested the contrary. Although 13 of the sample students fall into overweight group, they still have low to mild body image concern. But, the mean of the Body Shape scale increase slightly for the overweight teenagers in comparison to the normal weight ones, even though the increase is not significant. It is evident that overweight teenagers rate their appearance as attractive as the others. They do not need to buy branded clothes to compensate the concern of their body image.

Brand is rather unimportant for the teenagers when choosing clothing. Some said they were indifferent what the brand of the apparel they bought was. However, when taking look at the teenagers that responded to brand preference, there was one predominant brand- G-star, which targets young adults, not pre-adolescents and adolescents. This shows that teenagers want to look

older than they actually are. Age aspiration could be further researched, how it might influence the Danish teenagers buying decision making.

As overweight teenagers in Denmark are concluded with normal to high self-esteem, they should not have any difficulties in choosing physical stores and their preference to clothes are as positive as the other teenagers. However, there still was small number of students using online or both channels to gain information about desired clothes and best offers. This suggests that teenagers are still more comfortable in using the traditional- physical stores to acquire the clothing instead of online ones. Also teenagers are getting smarter when evaluating best offers as they in some cases are using multi-channels for their purchase. Apparel shops should find a good combination of online/offline presence to better suit the teenagers' demands, at the moment internet shop would not gain much popularity among the teenagers.

One of the reasons why the findings did not correspond to previous might be due to high quality of life in Nordic countries. According to Somarriba and Penna (2009), Denmark had been enlisted as one of top 25 in QOL index in EU. HRQOL plays an important role when evaluating health of obese children. In Sweden, good QOL has led to high self-esteem among the teenagers.

The Socio-culture of Denmark is really different from the one that hypothesis were derived. It is visible in the results; more attention should be paid for the "Danish way" as it might greatly influence teenager's buying behaviour. Even though the socio-culture has not been given credit when designing the research, it must be taken into consideration. Values of the socio-culture of Denmark such as equality, and mentality that you are no better than others, might explain partially why the hypothesis did not hold. Also the peer pressure should be lower or almost none existing for the overweight teenagers, thus, removing the need for clothing conformity and the use of brand to increase the social acceptance.

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Appendix

Appendix 1. Body Mass Index cut-offs (age & gender specific)

Girl				Boy			
Age	Underweight	Normal weight	Overweight	Age	Underweight	Normal weight	Overweight
13	< 15.4	15.4 - 22.6	> 22.6	13	< 15.4	15.4 - 21.8	> 21.8
14	< 15.8	15.8 - 23.2	> 23.2	14	< 16.0	16.0 - 22.4	> 22.4
15	< 16.2	16.2 - 24.0	> 24.0	15	< 16.2	16.2 - 23.2	> 23.2
16	< 16.6	16.6 - 24.6	> 24.6	16	< 17.2	17.2 - 24.2	> 24.2
17	< 17.0	17.2 - 25.2	> 25.2	17	< 17.8	17.8 - 24.8	> 24.8

Source: Kiess, W “Obesity in childhood and adolescence”

Appendix 2. Independent variables: Self-esteem, body image, weight and brand towards dependent variable: Store preference (online or physical store)

