Geeks' Intimate Attachments to their Computers

An Investigation of the Relationship between Geekism and Material Possession Love

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Abstract

The present study aimed at investigating the relationship between geekism and material possession love. At the same time the relationship between hedonism and material possession love was examined, because it is hypothesized that hedonism is an antagonist to geekism. Hypotheses were formulated relying on the components of the *triangular theory of love* by Sternberg (*intimacy, passion, commitment*). This study is part of a research project aiming to investigate geekism in more detail. A multi method approach was used with self-report (questionnaires) and implicit measures (picture story exercise and a modification of the Stroop Task). 61 respondents participated in this study. The data were analyzed using linear regression analyses with the scores on geekism and accordingly hedonism as predictors and the respective sore on the different components of the *triangular theory of love* as dependent variable. The results imply firstly, that there is an association between geekism and a high level of *intimacy* and secondly, that there is an association between hedonism and a moderate level of *passion*. Following studies on the topic of geekism might use these findings as a basic framework in order to gain deeper insights into the concept geekism and into how technology users attach to their products.

Samenvatting

De doelstelling van deze bacheloropdracht was het verkennen van de relatie tussen geekism en objectliefde. Tevens werd de relatie tussen hedonisme en objectliefde onderzoekt, omdat vermoed werd dat hedonisme een antagonist is tot geekism. Hypothesen werden ontwikkeld op basis van de componenten van de *triangular theory of love* van Sternberg (*intimiteit, passie, commitment*). Deze studie is deel van een project dat erop gericht is geekism in detail te onderzoeken. Een multi methoden benadering werd gebruikt met expliciete (vragenlijsten) en impliciete metingen (picture story exercise en een modificatie van de Stroop Task). In het geheel participeerden 61 respondenten in deze studie. De data werden geanalyseerd met lineaire regressie analyses met de score op geekism ofwel hedonisme als voorspeller en de respectieve score op de component van de *triangular theory of love* als afhankelijke variabele. De resultaten wijzen erop dat er een associatie is tussen geekism en een hoge level *intimiteit* en dat er een associatie is tussen hedonisme en een moderate level *passie*. Deze resultaten kunnen van toekomstige studies worden gebruikt als een basis om beter inzicht te krijgen in het concept geekism en in hoe gebruikers van technologie zich aan hun producten hechten.

1. Introduction

Are geeks in love with their computers? And how can this love be characterized? The study at hand tries to answer these questions and thereby investigates the relationship between geekism and material possession love. Thus, it is pursued to gain deeper insights into the concept geekism and into how different technology users attach to their products.

1.1 Geekism

The term ‘geek’ has not always meant the same as it means today. In fact its meaning has moved from one of an insult to one of endearment (McArthur, 2008). Historically, the term has been a label for carnival sideshow freaks (Sugarbaker, 1998). More recently, it was rather used to belittle intelligent outcasts, because of their expertise and the associated lack of social skills (McArthur, 2008). Thus, to be called ‘geek’ was a social stigma. In contrast to that, the term has nowadays become affectionate as a label for those who have extensive knowledge and display expertise in a certain field. It seems that ‘what was once geek has now become chic’ (McArthur, 2008). Trying to define geekism, McArthur (2008) states that geeks are engaged and enthralled in a topic and then act on that engagement.

In the study at hand geekism is investigated in the context of Human-Computer Interaction (HCI). The starting point for this is a study by Schmettow, Noordzij & Mundt (2013), who note that product quality has been studied by means of two sets of qualities: utilitarianism and hedonism. However, the authors suggest that utilitarianism and hedonism have never been investigated with respect to individual differences or motivational structures. Thus, Schmettow et al. (2013) initiate in their study that utilitarianism and hedonism can also be seen and studied as personality traits. Furthermore they introduce a third motivational structure in the interaction with technological products. They call this concept technology enthusiasm or geekism and suppose that it is independent of utilitarian and hedonistic needs. Before turning to geekism, utilitarianism and hedonism are described in more detail.

The first concept utilitarianism can be defined as the usability of a product or in how far the product supports the achievement of the user’s goals (Hassenzahl, 2004b). According to the International Organization for Standardization (ISO, 1998) utilitarianism has commonly been broken down into the sub-criteria effectiveness, efficiency and satisfaction. Moreover, van der Heijden (2004) suggests that utilitarian systems provide value that is external to the interaction between user and system, such as improved performance for instance.

The second concept hedonism can be described as the pleasure producing qualities a product offers (Hassenzahl, 2004b). Stimulation and identification with the product play an important role in this context. However, Law, Roto, Hassenzahl, Vermeeren and Kort (2009) mention that the definition of this term is still an ongoing endeavor, but that a few distinct themes can be identified, such as aesthetics, feelings and social identity. Moreover, van der Heijden (2004) assumes that hedonic systems aim to provide self-fulfilling rather than instrumental value to the user, because they are strongly linked to the fun aspect of using information systems. Thus, hedonism focuses on perception, subjective judgments and emotions. Furthermore, hedonism also involves valuing social identity. This means that people believe that the fact that a user owns a special product also says something about the user himself or as Hassenzahl (2004a, p. 380) formulates it: 'any object will inevitably make a statement about its user. The perceived ability of a product to make a favorable statement to relevant others (hedonic-identification) captures this.'

Interpreting these two concepts as different personality traits, Schmettow et al. (2013) suggest, that people with strong associations with utilitarianism should think of technology as a tool to complete tasks and reach goals, whereas hedonist users should appreciate the surface features of a product, such as design and brand. It is important to stipulate, that the study at hand follows Schmettow et al. (2013) and also implies that utilitarianism, hedonism and geekism, which will be discussed next, are motivational structures that differ between individuals and thus can be seen as personality traits.

The third concept geekism is illustrated by Schmettow et al. (2013): Firstly, they state that 'geekism seeks for intrinsic reward by interacting with the system, perhaps in a playful manner'. Secondly, another manifestation of geekism is that consumers are no longer passive, but they step up and modify or re-create a product for their own means. Thirdly, Schmettow et al. (2013) suggest that the geek personality enjoys intellectually demanding tasks and because of that, geek users have a strong urge and endurance to understand the inner workings of their products. By using a priming experiment, which will be discussed more deeply in the method section, Schmettow et al. (2013) found evidence that the concept geekism exists and that it has implications for research on quality of interactive products. In the context of this study following Schmettow et al. (2013) geekism will be defined as the intrinsically motivated interaction with a technological product.

The author of this paper hypothesizes that the relation of geekism to utilitarianism and hedonism respectively is quite a different one. Firstly, it is hypothesized in this study, that

there is general accordance between geekism and utilitarianism, because geeks try to improve technology for their own needs and thereby increase the efficiency and effectiveness and thus the usability of their computers. Hence, it is concluded that, the general aim of geekism and utilitarianism is the same. Based on this assumption, utilitarianism is excluded from subsequent investigations.

Secondly, it is hypothesized that hedonism is an antagonist to geekism, because both constructs have different focuses. Important themes in hedonism are aesthetics, feelings and social identity (Law et al., 2009), thus the more superficial characteristics of a product, whereas geekism is interested in understanding the inner workings of a product and in improving these workings (Schmettow et al., 2013). Furthermore, social approval plays an important role in hedonism, which means that people are interested in the social image they obtain by owning a special product (Hassenzahl, 2004a). Geekism, on the other hand, is driven by intrinsic reward. Further, persons with a geek predisposition tend to think of technical products as objects of intellectual challenge, rather than extensions of the self (Schmettow et al., 2013). Thus, it is concluded, that in hedonism technological products function as a means to an end. People interact with technological products in order to be entertained or to gain social approval. In geekism, however, the interaction with a technological product is already the main purpose.

Summing up, the aim of this study is to investigate the relationship between geekism and material possession love, to which we turn next. Based on the assumption that hedonism is an antagonist to geekism, it was chosen to also investigate the relationship between hedonism and material possession love. By that geekism and hedonism can be compared on the level of material possession love.

1.2 Material Possession Love

In the following, the characteristics of material possession love (MPL) will be discussed, before introducing a model of MPL. In the study at hand, it is assumed that love is one special form of attachment, therefore the terms ‘material possession love’ and ‘material possession attachment’ are used interchangeably.

In their study Schultz, Kleine and Kernan (1989, p. 360) propose a working definition of material possession attachment: ‘Attachment is a multidimensional property of material

object possession which represents the degree of linkage perceived by an individual between him/herself and a particular object.' This definition emphasizes that attachment is not a property of the individual or the object, but is rather an intersection of the two. It is assumed by the author of this study, that this intersection between a user and his beloved possession is comparable to the interaction in human-computer interaction. In the following, the characteristics of material possession attachment as proposed by Schultz et al. (1989) are discussed and related to geekism.

First of all, attachment is a perception and is expressed in thoughts, feelings and behaviors toward a specific object. Schultz et al. (1989) suggest that differences in these thoughts, feelings and behaviors should be evident between strong and weak attachments. Relating these observations to geekism, it can be suggested that these three ways of expression also play a role in geekism. First of all, it can be assumed that a geek, who is aware of the inner workings of his computer and aspires to improve its working, thinks a lot about it. These thoughts of a geek about his computer can be seen as an expression of attachment. Secondly, it seems that geeks also express different feelings while doing 'geek-stuff'. Schmettow et al. (2013) for example suggest that geeks enjoy intellectually demanding tasks and presumably a geek must show a great deal of happiness when he achieves in improving the working of his computer. This can also be seen in a quote of a qualitative interview study by Passlick (2013). As a self-proclaimed geek, participant P. states: 'And when I've solved a problem with a new, better technology and if this makes things easier for me, I'm pretty often excited by that.' (Passlick, 2013; p. 18). Thirdly, the behavior of a geek towards his computer can also express attachment by buying machine spares for the computer, open it and working on it. This is also a manifestation of the active way of how geeks deal with interactive products as Schmettow et al. (2013) describe.

The second characteristic Schultz et al. (1989) describe is that attachment is a multidimensional concept, composed of three fundamental dimensions: individuation, integration and temporal orientation. This means that concrete objects help us make transitions in our development 'by permitting us to carry past selves into the present, to maintain present selves or to make the transition into the future' (Schultz et al., 1989, p.361). Relating this to geekism, it is assumed that geeks develop their geek-identities amongst other things also by attachment to their computers. For example, Passlick (2013) states the importance of working with the computer for realizing one's own ideas. The author of this study assumes that working with the computer as one expression of attachment can help

realizing one's own ideas and thereby building one's own identity (individuation). Further, integration also plays an important role for geeks. In this context Passlick (2013) discusses that the geek community can have great motivational influence on geeks by implying a feeling of togetherness. Thus, it is concluded by the author of this paper that the fact that one is attached to a material possession by liking to work on it and to understand the inner workings of it can bring one in contact with other people. In this case it is the geek-community (integration), which can become an integral part of one's identity (individuation).

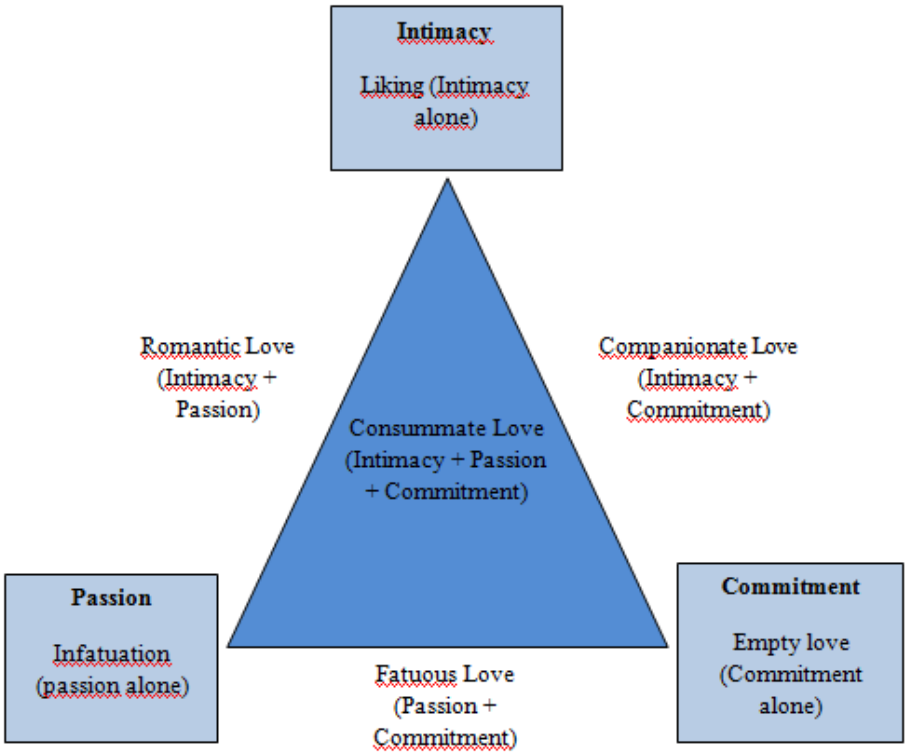
Thirdly, Schultz et al. (1989) suggest that people do not form attachments to specific objects on purpose. Rather attachment arises through consumption experience, which has meaning for the process of individuation and integration (see above). Relating this to geekism, it is assumed that geeks have a lot consumption experience with their computers, because they are generally interested in computers and like to use them. Therefore the chances are high that geeks form strong attachments to their products.

In the end, Schultz et al. (1989) come to the conclusion that material possession attachment is incompletely understood and further research needs to investigate this topic in more detail. Lastovicka and Sirianni (2011) do this by relying on a theoretical framework: They use the *triangular theory of love* by Sternberg (1986) as a basis in order to develop a questionnaire, which measures MPL. Lastovicka and Sirianni (2011, p.324) view MPL as 'a property of a consumer's relationship with a specific psychologically appropriated possession, reflecting the nature and degree of a consumer's positive emotional attachment to an object'. In the following, the *triangular theory of love* is described, before discussing how Lastovicka and Sirianni (2011) use this theory in the context of MPL.

The *triangular theory of love* by the psychologist Robert Sternberg, proposes that there are eight basic subtypes of love (Sternberg, 1986). More precisely, there are seven different forms of love and an eighth combination that results in the absence of love (nonlove). This taxonomy can be derived from the combination of three components (Sternberg, 1986): Firstly, there is the emotional component *intimacy*, the factor that involves liking and feelings of closeness. The second motivational component is *passion*, which is the drive that triggers attraction and sexual desire. Thirdly, the cognitive component *commitment* reflects the decision of the love-smitten to make a long-term commitment to a partner. Based on these three components, eight different kinds of love can be derived. The first three forms rely on single components: 1) a high level of *passion* alone creates infatuation, 2) high level of *intimacy* alone creates friendship and 3) a high level of *commitment* alone creates empty love.

These three forms are the early forms of love that often develop into more complex forms of love (Sternberg, 1986). More complex forms of love consist of two components: 4) high *intimacy* and high *passion* create romantic love, 5) high *intimacy* together with high *commitment* yield companionate love, 6) high *passion* with a high level of *commitment* is fatuous love and 7) high levels on all three components create enduring romantic love (cp. figure 1). Research has shown that there is good support for the *triangular theory of love* (Sternberg, 1999). Aron and Westbay (1996), for instance, asked in their study people to rate 68 prototypical features of love. They found that the various features fell into three categories: *passion*, *intimacy* and *commitment*.

Figure 1: Triangular Theory of Love



Lastovicka and Sirianni (2011) rely on this theory to investigate MPL. They describe, for instance, that *intimacy* with regard to possessions can be gained by knowing the beloved possession both physically and intellectually and that *commitment* is a devotion to keep the possession. Furthermore, the seven different forms of love, as described above, also play a role in material possession love (Lastovicka and Sirianni, 2011). A particular consumer's love will tend towards a particular form of love and its own effects.

The study at hand is geared to the way Lastovicka and Sirianni (2011) explore MPL against the background of the *triangular theory of love*. The MPL scale developed by them is used (see section 2.2) and the hypotheses, which will be generated in the next section, rely on the three components of the *triangular theory of love*: *intimacy*, *passion* and *commitment*.

1.3 Hypotheses

In this section, hypotheses concerning geekism on the level of MPL are developed. Firstly, the emotional component *intimacy* is concerned. It is said that *intimacy* with possessions can be gained by knowing the beloved possession both physically and intellectually (Lastovicka and Sirianni, 2011). Further, Schmettow et al. (2013) state that geeks enjoy intellectually demanding tasks and that geeks have a strong urge to understand the inner workings of their products. Pulling these two studies together, the first hypothesis is formulated:

Geekism is associated with a high level of intimacy.

Secondly, the motivational component *passion* is concerned. Sternberg (1986) describes *passion* as the drive that triggers attraction. Moreover, Passlick (2013; p.22) talks about the "strong desire" geeks have to improve technology and Schmettow et al. (2013; p.4) talk about "the strong urge and endurance to understand the inner workings of a computer system". It is supposed in this study that these motivational drives are a form of *passion*, therefore the second hypothesis says:

Geekism is associated with a high level of passion.

Thirdly, the cognitive component *commitment* is taken into account. Lastovicka and Sirianni (2011) note that *commitment* plays an important role in MPL. In this context it is a devotion to keep the possession. Contrary to that, Myers (1985) concludes that the degree of attachment to a specific object can change over time. Thereby she refers to developmental progression. This means that throughout their lives, people will dispose old attachments and develop new ones as their selves develop. The author of this paper sides in this context with Myers (1985) and assumes that geeks are not strongly committed to a special product, rather they are devoted to new challenges and therefore they shouldn't have a problem with the quickly developing technology market and new products. Based on this assumption the third hypothesis is formulated:

Geekism is associated with a low level of commitment.

Furthermore, as has already been mentioned, it is hypothesized in this study that hedonism is an antagonist to geekism. Based on this assumption, hypotheses about hedonism in relation to MPL are developed. Thereby, again the three components of the *triangular theory of love* are used. Firstly, *intimacy* is concerned. It is suggested that hedonists don't show a high level of *intimacy* with their material possessions, because they are not interested in knowing the beloved possession both physically and intellectually (cp. Lastovicka and Sirianni, 2011). Rather, more superficial features matter for them, such as aesthetics, the pleasure they can gain from the technology and the social image they obtain by owning it (Hassenzahl, 2004b). Thus, the fourth hypothesis claims:

Hedonism is associated with a low level of intimacy.

Secondly, with respect to the motivational component *passion*, it is hypothesized that hedonists are motivated to interact with technological products, because of good designs, entertainment and the social image they can obtain by owning a special possession (Hassenzahl, 2004a). The author of this study hypothesizes that hedonists show a certain amount of *passion* concerning their material possessions. Based on these assumptions the fifth hypothesis is formulated:

Hedonism is associated with a high level of passion.

Thirdly, in relation to *commitment*, the author of this study assumes that hedonists are committed to a special brand of products, as long as this brand has a positive social image (cp. Hassenzahl, 2004a). In this context it is thought about the Apple followers who always buy the latest products of this brand (Belk and Tumbat, 2005). This means that brand loyalty presumably plays an important role in hedonism. Therefore the sixth hypothesis runs as follows:

Hedonism is associated with a high level of commitment.

Thus, based on this description, it can be concluded that in this study it is hypothesized that geeks' love for their possessions tends to be romantic love, whereas hedonists love their possessions fatuously (cp. Figure 1).

2. Method

2.1 Sample

61 respondents participated in the study; 21 were students of technical studies and 39 were Psychology students or had another profession. Only Dutch and German respondents were allowed to participate, because it was essential that the study was done in the mother tongue of the respondents in order to keep the influence of some uncontrollable variable such as text understanding at a minimum. A more thoroughly description of the sample is given in section 3.1..

2.2 Materials

This study is part of a research project aiming to investigate geekism in more detail. A multi method approach was applied, which means that different methods are used to explore the same phenomenon (Jick, 1979). By looking at the same phenomenon from different angles, the accuracy of the study at hand can be enhanced. Or as Campbell and Fiske (1959) put it: '…the convergence or agreement between two methods…enhances our belief that the results are valid and not a methodological artifact.' (Bouchard, 1976). In accordance with that, Lucas and Baird (2005) also call for a multi method assessment, where implicit measures complement or validate self-reports. Based on that, in the study at hand, both explicit measures are used in the form of questionnaires and implicit data are gained by a picture story exercise and a modification of the Stroop Task.

In the following, the used materials are described. Firstly, a picture story exercise (PSE) was used to measure geekism in the respondents in an implicit manner. This PSE was developed by Keil (2013) and is based on an instruction by Pang (2010). In general the test consists of 15 pictures; each respondent got 8 pictures. The test is projective, which means that while describing the pictures, respondents are influenced by their own needs and wishes, which is reflected in their descriptions. By means of a scoring manual, three total scores of the motivational structures utilitarianism, hedonism and geekism are gained.

Secondly, the Schwartz value scale was employed (SVS; Schwartz, 1992). The original version of this scale consists of 57 items and 10 value scales (Power, Achievement, Hedonism, Stimulation, Self-direction, Universalism, Benevolence, Tradition, Conformity, and Security). The participants are asked to rate the importance they would give to the 57 value items as life-guiding principles on a 9-point rating scale from -1 (opposed to my principles), 0 (neutral), 3 (important), to 7 (of supreme importance). For the purpose of this

study, however, only ‘achievement’, ‘hedonism’, ‘stimulation’ and ‘self-direction’ are of importance. Therefore only this value scales were given to the participants (items 4, 5, 9, 16, 25, 31, 34, 37, 39, 41, 43, 50, 53, 55, 57 of the original scale). The SVS has been extensively validated cross-culturally. The scale was translated into German and Dutch. In both cases two independent native speakers translated the items and their translations were later faithfully combined to create a coherent scale.

Thirdly, a scale aiming to measure geekism was used (Sander, 2013). It consists of 34 items and can be answered on a 4-point Likert scale from -2 (completely disagree) to 2 (completely agree). Further the participants could also chose to not answer an item (no answer).

Fourthly, a scale to measure material possession love (MPL scale) was employed, which was developed by Lastovicka and Sirianni (2011). They used as basis the *triangular theory of love* (Sternberg, 1986) to develop three scales to measure the three components of MPL. In general they generated 17 items, with six items measuring *passion*, 8 items for *intimacy* and 3 items measuring *commitment*. The items have the form of a statement and can be answered on a 6-point Likert scale (1 = definitely disagree, 6 = definitely agree). The reliabilities of the three subscales are acceptable, with a Cronbach’s alpha of 0.90 for the *passion*-scale, 0.94 for the *intimacy*-scale and 0.86 for the *commitment*-scale (Lastovicka and Sirianni, 2011). The scale was translated into German and Dutch. In both cases two independent native speakers translated the items and their translations were later faithfully combined to create a coherent scale.

Fifthly, the Need for Cognition Scale was used (NCS; Cacioppo, Petty and Kao, 1984). This scale consists of 18 items. Participants are asked to rate the extent to which they agree with each of 18 statements about the satisfaction they gain from thinking. For that a 7-point Likert scale is used (from -3 = very strong disagreement to +3 = very strong agreement). The final score is the sum of the individual’s points from each of the 18 statements. Individuals with a high score on this scale are usually motivated for challenging tasks, not strongly influenced by surface features, and have good control over their attentional resources (Cacioppo, Petty, Feinstein & Jarvis, 1996; Ruiter, Verplanken, De Cremer & Kok, 2004). Schmettow et al. (2013) suggest that the scores on the NCS can be used as an approximation for geekism traits. The NCS has been shown to have a high internal consistency (Cronbachs Alpha of 0.92; Cacioppo et al., 1984) and substantial validity (Heesacker, 1985). Moreover,

the test-retest correlation suggests that need for cognition is a highly stable individual difference variable (Sadowski & Gulgoz, 1992b).

Sixthly, a priming experiment was conducted. This study relied on Schmettow et al. (2013), who used a modification of the Stroop Task. In the original version of the Stroop Task respondents are shown color words, written in different colors and it is the task of the respondents to react to the color, the word is written in (Macleod, 1991). There are two possible conditions: congruent and incongruent. In the congruent condition the color word and the color, the word is written in, match. For instance, there is the word GREEN, written in green, then the respondent has to react to green. In the incongruent condition, the color word and the color, the word is written in, don't match. For instance, there is the word GREEN, written in red, then the respondent has to react to red. The typical result is that the respondents react slower in the incongruent conditions. The interpretation is that reading is an automated process and hard to repress. Therefore, the reading of the color word interferes with the reaction to the color, the word is written in. This interference is stronger for incongruent conditions, because in congruent conditions, reading the color word already yields the right color to react to. Many studies succeeded in replicating the Stroop task and it has appeared to be robust in many variants (Kane & Engle, 2003). In their modification of the Stroop Task Schmettow et al. (2013) used *priming* in order to gain insights into unconscious associations respondents have with technical products. *Priming* can be illustrated using the *theory of spreading activation* (Balota & Lorch, 1986): information in memory is represented in nodes; the relations between different nodes can be seen as associative pathways. When a node gets activated, this activation spreads along the associative pathways to other connected nodes. Thereby, related information also gets activated and this is referred to as *priming* (Tulving & Schacter, 1990). Thus, Schmettow et al. (2013) generated three picture categories for priming: Firstly, control pictures that show daily objects like trees or clothes. Secondly, neutral pictures that show computers and thirdly, geek pictures that show opened computers and robots. After each picture a target word written in red, green or blue from three different word categories is shown to the respondents: For the concept utilitarism words like 'apply' or 'multifunctional' are used, examples for the concept hedonism are 'attractive' or 'popular' and for the concept geekism words like 'understand' or 'improve' were used. The respondent has to press an arrow key on the keyboard according to the color, the word is written in (red= left, green= down, blue= right). Longer reaction times in the color-naming task were interpreted as stronger associations between prime and target. Schmettow et al. (2013) found that people with geek predispositions (high scores on NCS) show longer reaction times on geekism words.

Thus, it was concluded, that people with geek predispositions have strong associations with geekism words. In the study at hand it is pursued to replicate these findings.

2.3 Procedure

The Psychology students were recruited through private contacts and the Sona-system, this is a system of the University of Twente where students of the behavioral studies can participate in studies as part of their course fulfillment. Students of technical studies were paid an appropriate sum for participation (12 Euro). They were reached through private contacts, flyers, posters and social network sites like 'Facebook'. Furthermore, people with other professions were likewise reached through private contacts.

Two different appointments were made with the participants. At the beginning, the participants were instructed and informed consent was gained. The first appointment took 1,5 hours during which the participants first had to fill in the PSE (Keil, 2013). For every picture they were given 10 seconds to take a look and then they had 3 minutes to write something about the picture. Further the respondents had to fill in the different questionnaires (SVS, Geekism, MPL scale, NCS). This was done in group sessions of mostly 4 participants, due to practical and financial considerations. During the data collection it turned out that in the German version the first item of the subscale 'self-direction' of the SVS was missing. However, this problem is controlled for by using mean scores and z-standardizations of the subscales (cp. section 2.4). At the end of the first appointment, the participants were informed about the second appointment, which took place one to two days after the first appointment. During the second appointment, which lasted one hour, participants had to do the Stroop Task on a Laptop. This was done individually in small chambers to keep the chance of distraction at a minimum level. In the end the respondents had to fill in the geekism questionnaire (Sander, 2013) a second time in order to yield retest-scores.

For the purpose of this study, it seemed necessary to deceive the real aim of the study, since it can be assumed that participants would be influenced. Thus, it is consciously chosen to avoid the word 'geekism' and the participants were told that the study was about Human-Computer interaction and the user's feelings toward their computers. In the end participants were fully debriefed and given the chance to ask questions. Then they were thanked for their participation.

2.4 Data Analysis

First of all, the participants' scores on the subscales were calculated. From the SVS four subscales were used: 'achievement', 'hedonism', 'stimulation' and 'self-direction'. For the subscale 'achievement' the scores of the items 34, 39, 43 and 55 of the original scale were added and divided by the number of items in the subscale. By that a mean score of the subscale was gained. The same was done for the other three subscales. The subscale 'hedonism' includes the items 4, 50 and 57 of the original scale. For the subscale 'stimulation' the items 9, 25 and 37 of the original scale are used and the subscale 'self-direction' includes the items 5, 16, 31, 41 and 53. In an analogous manner the mean scores on the MPL scale were calculated. Item 1 to 6 measure *passion*, item 7 to 14 refer to *intimacy* and item 15 to 17 measure *commitment*. Furthermore, the scores on the subscales of the PSE (hedonism, utilitarism, geekism) were calculated by dividing the total score on every motive of a picture through the number of written words about the picture and multiplying by 1000. By this, the score is corrected to represent the amount of expressed motives per 1000 words. In order to calculate the total test scores for each category, the corrected scores of each category are added and divided by eight, because 8 pictures were given to each respondent. Moreover, the mean scores on the geekism scale as well as on the NCS were calculated by summing up the scores on the items and dividing through the number of items in the scale. The z-standardized scores of the scales and subscales were used for all further analyses.

Secondly, the hypotheses were tested using linear regression analyses. For the first three hypotheses concerning geekism, the mean score of the geekism scale was used as a predictor and the respective mean score of the MPL subscale was the dependent variable. In an analogous manner the other three hypotheses concerning hedonism were tested by using the mean score of the subscale hedonism (SVS) as a predictor and the respective mean score of the MPL subscale as the dependent variable.

Thirdly, further linear regression analyses were applied in order to gain deeper insights into the data. The scores on the PSE subscales were used as independent variables to predict the respective mean score of the MPL subscale. Moreover, both the mean score of the MPL scale as well as the PSE score geekism were used as independent variables to predict the score on the geekism scale.

Fourthly, the data from the Stroop Task were analyzed with Generalized Estimating Equations with the linear dependent variable reaction time and a Gaussian error term. The

variables ‘word category’ as well as ‘prime category’ were used as factors, whereas the respective MPL subscales functioned as covariates. The parameters ‘age’ and ‘trial’, were used as control variables, because previous research has show that they can have significant effects (Schmettow et al., 2013). The main effects of all used variables were contained in the model. The interaction effects between word category and respective MPL subscale as well as the interaction effects between prime category and respective MPL subscale were investigated. Further the threefold interaction effects between word category, prime category and the respective MPL subscale were also contained in the model. By that, the association between scores on the MPL subscales and the word category (utilitarism, hedonism or geekism) were investigated. Longer response times were interpreted as stronger associations between the component of MPL (*intimacy, passion or commitment*) and the respective concept (utilitarism, hedonism or geekism). Further, it was pursued to replicate the findings of Schmettow et al. (2013). Therefore the interaction effects between the mean scores on NCS and the word category (utilitarism, hedonism or geekism) were investigated. Longer response times were interpreted as stronger associations.

Lastly, a Confirmatory Factor Analysis (CFA) was conducted using SmartPLS in order to test the model behind the MPL scale. As latent variables geekism as well as the components of the *triangular theory of love* (*passion*, *intimacy* and *commitment*) were used.

3. Results

3.1 Demographics

61 respondents participated in the study. 21 were students of technical studies like Creative Technology, Computer Science and Electrical Engineering and 39 were Psychology students or had another profession. The sample consisted of 27 female and 34 male respondents. The average age was 26.3 years (ranging from 15 to 66, SD= 10.5; cp. table 1).

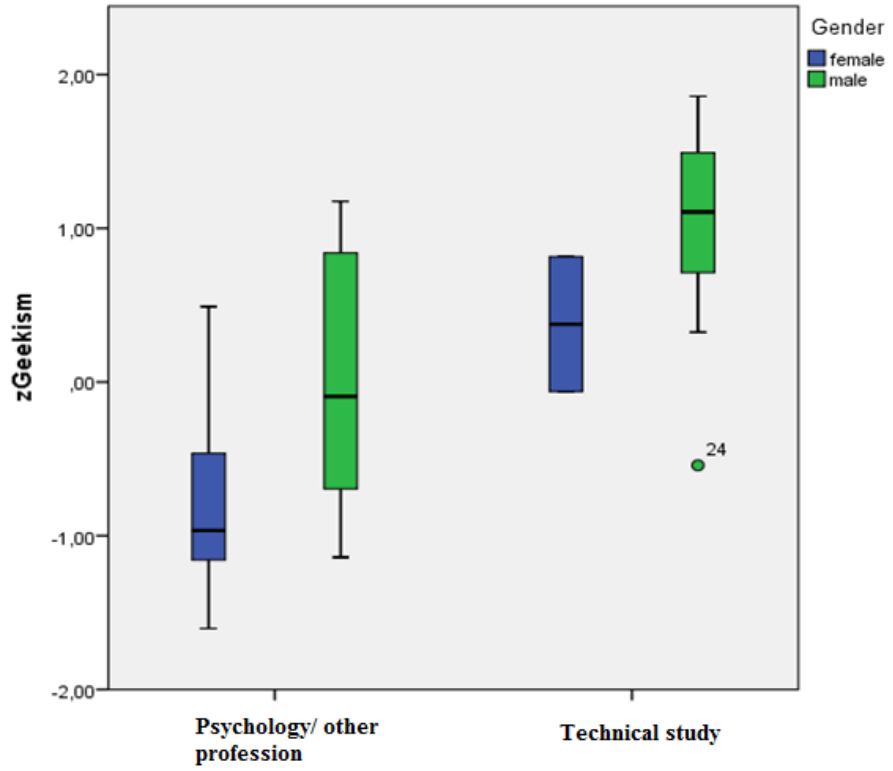
Table 1: demographic data

		Percent	M (SD)
Age			26.3(10.5)
Gender			
male	51	20.4	
female	199	79.6	
Study			
Technical studies	21	35	
Psychology/ Other	39	65	

Note. M= mean, SD= standard deviation.

As can be seen in figure 2, a strong association between geekism and gender was found. Male participants scored significantly higher on geekism than female participants, both in technical studies, as well as in Psychology or other professions. Further, in a linear regression analysis using gender as predictor, a strong association between gender and geekism was found, indicating that gender explains 40 percent of the variance of geekism (R^2= 0.402).

Figure 2: Relationship between geekism and gender



3.2 Hypotheses testing

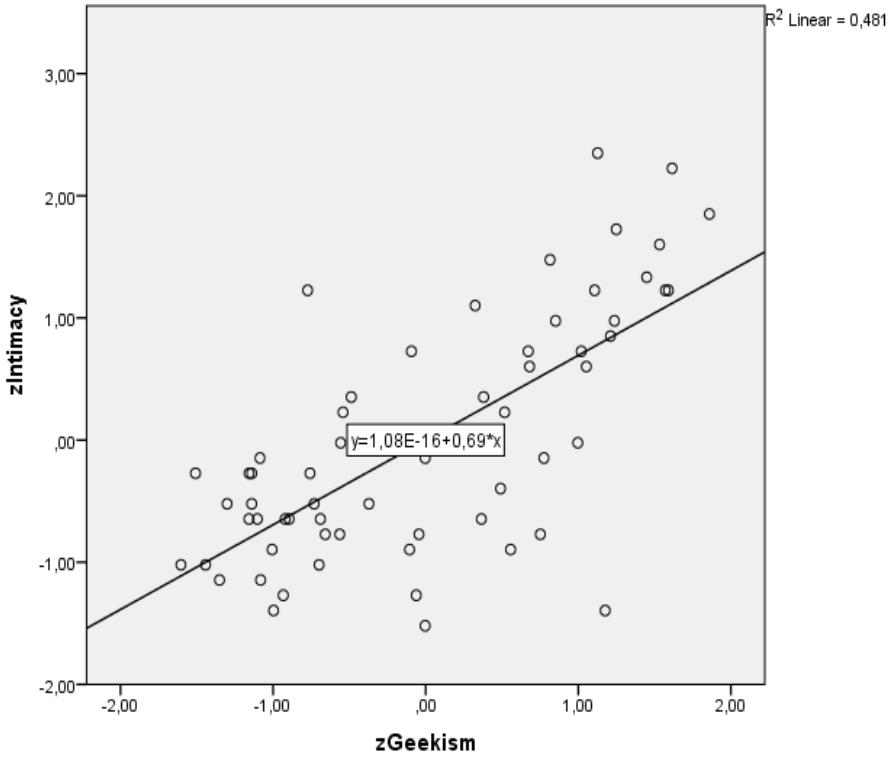
The hypotheses were tested with linear regression analyses. Variance analyses were applied to check the significances of regression equation and coefficient of regression model. Firstly, the hypotheses concerning geekism were investigated, hereby the score on the geekism scale was always used as a predictor and the score on the respective MPL subscale was the dependent variable. The first hypothesis says '*Geekism is associated with a high level of intimacy'.* From the ANOVA table it can be concluded that the regression coefficient differs significantly from 0 (F(1,59)=54.61 p=0.000). As can be seen in table 2, there is a significant regression coefficient of 0.70. Further, evidence exists that the R^2 is 0.48, which means that almost half of the variance of the dependent variable *intimacy* is explained by the independent variable geekism (cp. figure 3).

Table 2: linear regression to predict the variable intimacy

Variable	*B*	*SE B*	*p*
Hedonism	0.08	0.13	0.53
Geekism	0.70	0.09	0.00*

Note. *p<.05.

Figure 3: The relationship between geekism and intimacy



The second hypothesis states that '*Geekism is associated with a high level of passion'*. There was no evidence found, that the regression coefficient differs significantly from 0 (F(1,59)= 0.989, p= 0.324, cp. table 3).

Table 3: linear regression to predict the variable passion

Variable	*B*	*SE B*	*p*
Hedonism	0.36	0.12	0.01*
Geekism	0.13	0.13	0.32

Note. *p<.05.

For the third hypothesis ('*Geekism is associated with a low level of commitment'*) no significant results were found (F(1,59)= 0.079, p= 0.780, see table 4).

Table 4: linear regression to predict the variable commitment

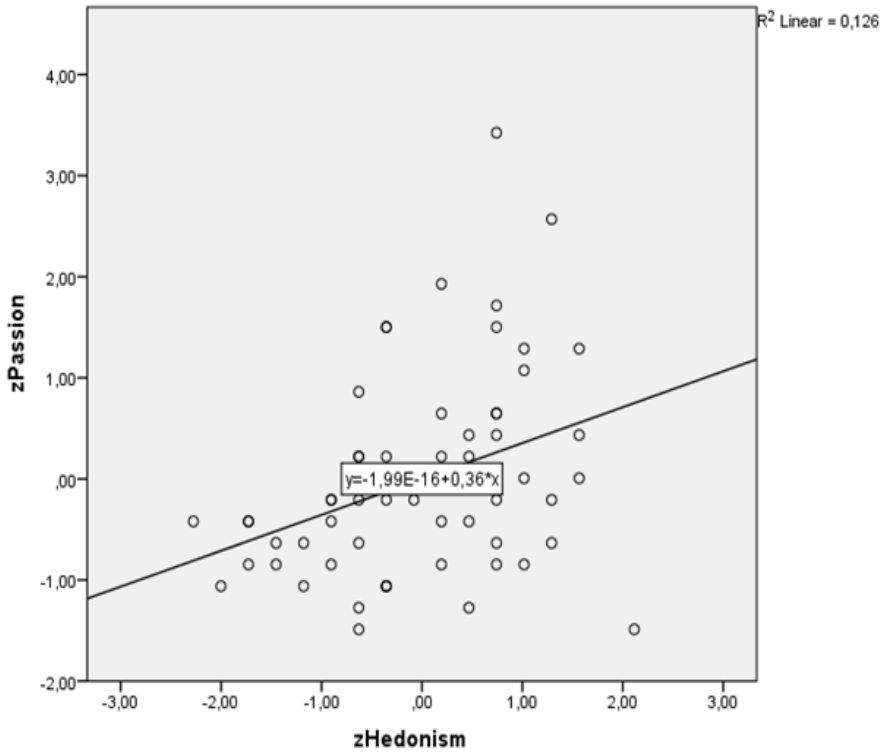
Variable	*B*	*SE B*	*p*
Hedonism	0.08	0.13	0.52
Geekism	-0.04	0.13	0.78

Note. *p<.05.

In the following the hypotheses concerning hedonism will be reviewed. The score on the hedonism scale was always used as predictor and the score on the respective MPL subscale was the dependent variable. The fourth hypothesis is *'Hedonism is associated with a low level of intimacy'.* As can be seen in table 1 no significant results concerning this hypothesis were found (F(1,59)= 0.398, p= 0.531).

The fifth hypothesis claims that '*Hedonism is associated with a high level of passion'.* From the ANOVA table it can be concluded that the regression coefficient differs significantly from 0 (F (1,59)=8.51, p=0.005; cp. figure 4). As can be seen in table 2, there is a significant regression coefficient of 0.36. While statistically significant, the association between hedonism and a high level of passion is weak (R^2=0.13).

Figure 4: The relationship between hedonism and passion



For the last hypothesis '*Hedonism is associated with a high level of commitment'* no significant results could be found (F(1,59)= 0.414, p= 0.522, see table 3).

3.3 Subsequent analyses

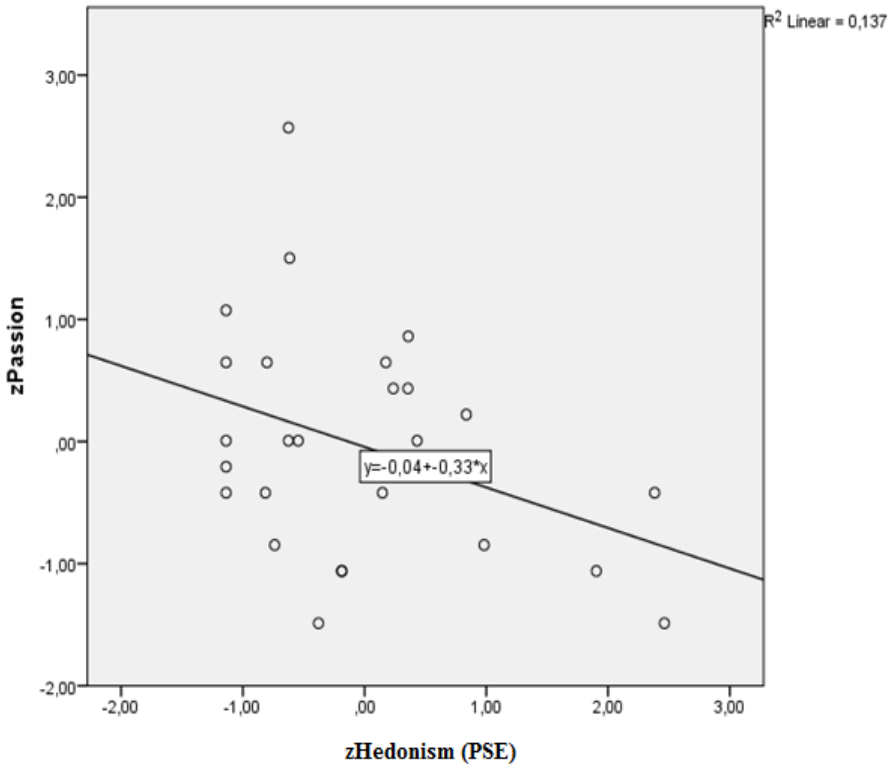
Further, linear regression analyses were applied using the scores of the subscales of the implicit PSE (hedonism, utilitarism, geekism) as the independent variable and the scores on the respective MPL subscale as the dependent variable. Only one significant result was found concerning the fifth hypothesis ('*Hedonism is associated with a high level of passion'.*). Evidence exists that the regression coefficient differs significantly from 0 (F (1, 27)= 4.286, p= 0.048). As can be seen in table 5, there is a significant negative regression coefficient of -0.33. While statistically significant, the association between the PSE score hedonism and passion is weak (R^2=0.14; cp. figure 5).

Table 5: linear regression to predict the variable passion

Variable	*B*	*SE B*	*p*
Hedonism (PSE)	-0.33	0.16	0.05*

Note. *p<.05.

Figure 5: relationship between the PSE score hedonism and passion



Moreover, the MPL score and the PSE score geekism were used as independent variables to predict the geekism score. Evidence exists that the regression coefficients differ significantly from 0 ($F(2,26) = 18.32$, $p= 0.000$, cp. table 6). An R^2 of 0.59 was found, which shows, that almost 60 percent of the variance of geekism is explained by both MPL and the PSE score geekism. This association is quite strong compared to an R^2 of 0.29 for the PSE score geekism alone as predictor, indicating that almost 30 percent of the variance of geekism is explained by the PSE score geekism.

Table 6: linear regression to predict the variable commitment

Variable	*B*	*SE B*	*p*
MPL	0.61	0.14	0.00*
Geekism (PSE)	0.54	0.14	0.00*

Note. *p<.05.

3.4 Stroop Task

The data from the Stroop Task were analyzed with Generalized Estimating Equations. It was found that the variables 'hedonism' and 'age' have significant effects on the dependent variable reaction time (cp. tables 7 to 10).

Table 7 shows the results concerning *intimacy*. Taking a look at the interaction effect between the word category geekism and *intimacy*, it can be noted, that people, who score high on *intimacy*, have only slightly slower reaction times for geekism words (B= 1.71), then for utilitarian words (reference category). On average people, who score high on intimacy, need 1.71 ms longer to react on geekism words then to react on utilitarian words. This effect is amplified by the prime category geekism (B=10.66), indicating strong associations between geekism and intimacy. Concerning the interaction effect between the word category hedonism and *intimacy*, it has to be stipulated that the reaction times on hedonism words are only slightly slower (B= 1.09) then for utilitarian words (reference category). This suggests that people, who score high on *intimacy*, have only moderate associations with hedonism words. In both cases the appointed level of significance though is not met.

Table 7: Interaction effects between word category and intimacy and between prime category and intimacy

Variable	*B*	*SE B*	*95% Wald Confidence Interval*		*Hypothesis Test*		
			Lower	*Upper*	*Wald Chi²*	*df*	*p*
Intercept	552.54	35.56	482.85	622.23	241.45	1	0.00*
Word category							
Geekism	3.67	7.43	-10.90	18.23	0.24	1	0.62
Hedonism	18.59	7.38	4.12	33.06	6.34	1	0.01*
Utilitarism	0[a]						
Prime category							
Control	-3.85	6.26	-16.12	8.42	0.38	1	0.54
Geek	11.85	7.63	-3.11	26.81	2.41	1	0.12
Neutral	0[a]						
Intimacy	-10.31	19.18	-47.90	27.29	0.29	1	0.59
Trial	-0.22	0.21	-0.64	0.21	1.01	1	0.32
Age	2.60	1.16	0.32	4.89	5.00	1	0.03*
Word category*Intimacy							
Geekism*Intimacy	1.71	11.76	-21.34	24.75	0.02	1	0.89
Hedonism*Intimacy	1.09	8.81	-16.18	18.36	0.02	1	0.90
Utilitarism*Intimacy	0[a]						
Prime category*Intimacy							
Control*Intimacy	-6.91	10.11	-26.72	12.90	0.47	1	0.49
Geek*Intimacy	10.66	12.41	-13.67	34.99	0.74	1	0.39
Neutral*Intimacy	0[a]						

Note. [a] set to zero because this parameter is redundant (reference category).
*p<.05.

Table 8 displays the results for the variable *passion*. Taking a look at the interaction effects, it has to be noted that people, who score high on *passion*, have a slow reaction time for geekism words (B= 7.32) and a fast reaction time for hedonism words (B= -13.07). This means that people, who score high on *passion* need on average 20 ms longer to react on geekism words compared to hedonism words. These results suggest that people with a high score on *passion*, have stronger associations with geekism words than with hedonism words. This effect is reinforced by the prime category geekism (B= 12.32). However, the appointed level of significance is not met.

Table 8: Interaction effects between word category and passion and between prime category and passion

Variable	*B*	*SE B*	*95% Wald Confidence Interval*		*Hypothesis Test*		
			Lower	*Upper*	*Wald Chi²*	*df*	*p*
Intercept	543.60	35.89	473.27	613.94	229.46	1	0.00*
Word category							
Geekism	3.65	7.57	-11.18	18.49	0.23	1	0.63
Hedonism	18.74	7.49	4.06	33.43	6.26	1	0.01*
Utilitarism	0[a]						
Prime category							
Control	-3.95	6.52	-16.73	8.84	0.37	1	0.55
Geek	11.73	7.64	-3.25	26.70	2.35	1	0.13
Neutral	0[a]						
Passion	4.78	17.81	-30.12	39.69	0.07	1	0.79
Trial	-0.20	0.21	-0.62	0.22	0.88	1	0.35
Age	2.92	1.17	0.64	5.21	6.29	1	0.01*
Word category*Passion							
Geekism*Passion	7.32	13.29	-18.72	33.37	0.30	1	0.59
Hedonism*Passion	-13.07	8.98	-30.67	4.54	2.12	1	0.15
Utilitarism*Passion	0[a]						
Prime category*Passion							
Control*Passion	-7.01	10.04	-26.70	12.67	0.49	1	0.49
Geek*Passion	12.32	13.03	-13.23	37.86	0.89	1	0.35
Neutral*Passion	0[a]						

Note. [a] set to zero because this parameter is redundant (reference category).
*p<.05.

Table 9 shows the results concerning the variable *commitment*. Taking a look at the interaction effect between the word category geekism and *commitment*, evidence exists that people, who score high on *commitment*, have only a slightly slower reaction time on geekism words (B= 0.21) compared to utilitarian words (reference category). People, who score high on *commitment* need on average 0.21 ms longer to react on geekism words then to react on utilitarian words. This effect is amplified by the prime category geekism (B= 10.45), indicating an association between geekism and *commitment*. Taking a look at the interaction effect between hedonism words and *commitment*, it can be noted that the reaction time is quite fast (B= -13.38), which stipulates that people, who score high on *commitment*, have only weak associations with the concept hedonism. In both cases, however, the appointed level of significance is not met.

Table 9: Interaction effects between word category and commitment and between prime category and commitment

Variable	*B*	*SE B*	*95% Wald Confidence Interval*		*Hypothesis Test*		
			Lower	*Upper*	*Wald Chi²*	*df*	*p*
Intercept	544.50	34.49	476.90	612.09	249.27	1	0.00*
Word category							
Geekism	3.39	7.60	-11.50	18.28	0.20	1	0.66
Hedonism	18.37	7.28	4.10	32.65	6.37	1	0.01*
Utilitarism	0[a]						
Prime category							
Control	-3.86	6.44	-16.47	8.76	0.36	1	0.55
Geek	12.12	7.75	-3.06	27.30	2.45	1	0.12
Neutral	0[a]						
Commitment	4.37	13.93	-22.93	31.78	0.10	1	0.75
Trial	-0.20	0.21	-0.61	0.22	0.85	1	0.36
Age	2.89	1.12	0.69	5.10	6.60	1	0.01*
Word category*Commitment							
Geekism*Commitment	0.21	8.51	-16.47	16.89	0.00	1	0.98
Hedonism*Commitment	-13.38	7.99	-29.03	2.28	2.80	1	0.09
Utilitarism*Commitment	0[a]						
Prime category*Commitment							
Control*Commitment	-9.54	8.55	-26.30	7.22	1.25	1	0.26
Geek*Commitment	10.45	12.74	-14.52	35.42	0.67	1	0.41
Neutral*Commitment	0[a]						

Note. [a] set to zero because this parameter is redundant (reference category).
*p<.05.

Trying to replicate the findings of Schmettow et al. (2013), the interaction effects between the scores of the NCS and the word category are investigated. As can be seen in table 10, people, who score high on NCS, have only slightly faster reaction times for geekism words (B= -1.18), then for utilitarian words (reference category). On average people, who score high on NCS are 1.18 ms faster on geekism words then on utilitarian words. However, concerning the interaction effect between the prime category geekism and NCS, a slow reaction time can be found (B= 5.36), indicating associations between a high score on NCS and geekism. The appointed level of significance though is not met.

Table 10: Interaction effects between word category and need for cognition and between prime category and need for cognition

Variable	*B*	*SE B*	*95% Wald Confidence Interval*		*Hypothesis Test*		
			Lower	*Upper*	*Wald Chi²*	*df*	*p*
Intercept	543.99	35.21	474.99	612.99	238.76	1	0.00*
Word category							
Geekism	3.54	7.45	-11.05	18.14	0.23	1	0.63
Hedonism	18.40	7.29	4.11	32.69	6.37	1	0.01*
Utilitarism	0[a]						
Prime category							
Control	-3.69	6.50	-16.44	9.06	0.32	1	0.57
Geek	11.70	7.50	-2.99	26.40	2.44	1	0.12
Neutral	0[a]						
NCS	-4.21	12.65	-28.99	20.58	0.11	1	0.74
Trial	-0.20	0.21	-0.62	0.22	0.89	1	0.35
Age	2.91	1.14	0.68	5.14	6.56	1	0.01*
Word category*NCS							
Geekism*NCS	-1.18	8.22	-17.29	14.94	0.02	1	0.89
Hedonism*NCS	12.27	7.51	-2.45	26.98	2.67	1	0.10
Utilitarism*NCS	0[a]						
Prime category*NCS							
Control*NCS	11.59	8.52	-5.11	28.30	1.85	1	0.17
Geek*NCS	5.36	8.81	-11.90	22.62	0.37	1	0.54
Neutral*NCS	0[a]						

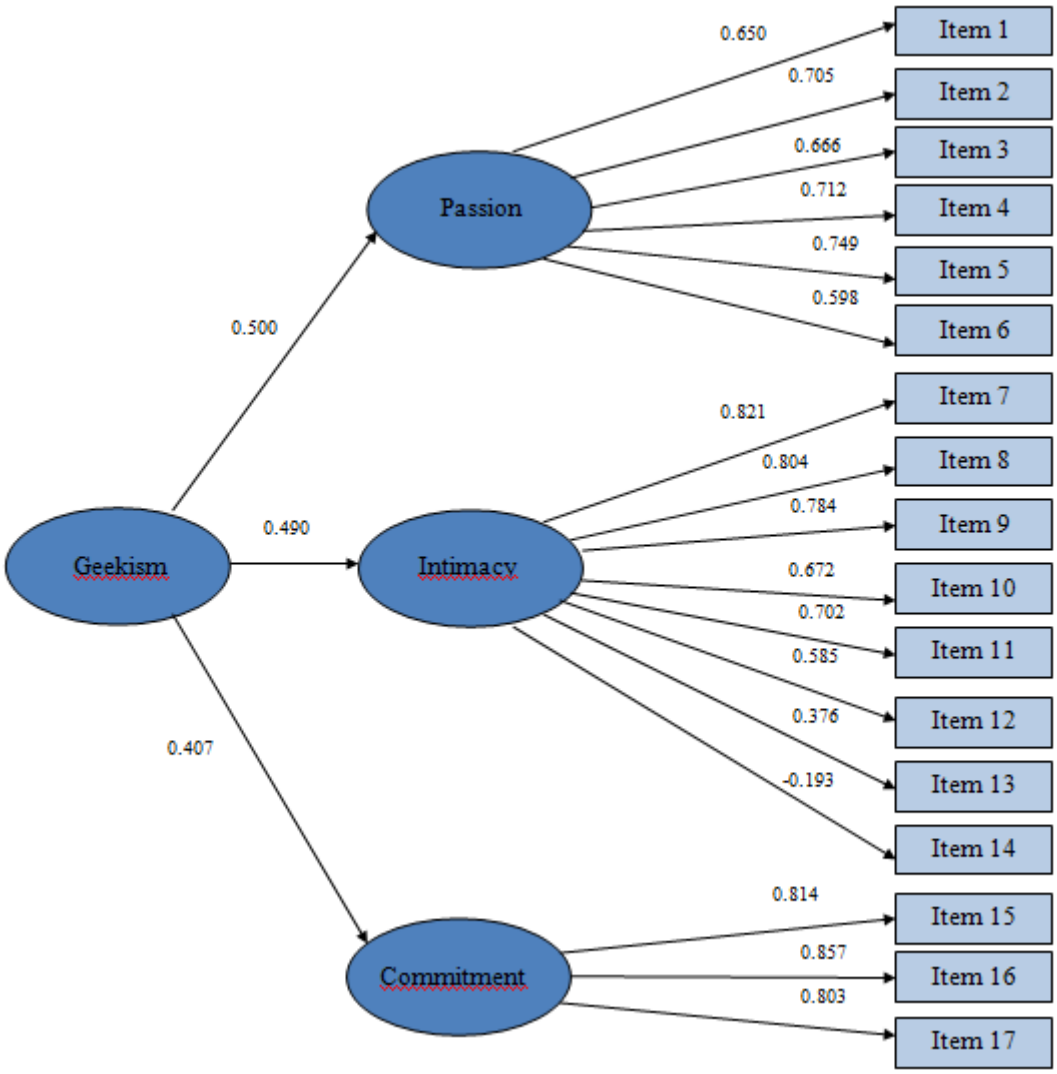
Note. [a] set to zero because this parameter is redundant (reference category).
*p<.05.

3.5 Confirmatory Factor Analysis

A confirmatory factor analysis was applied to test the model behind the MPL scale. As can be seen in figure 6, geekism as well as the components of the *triangular theory of love* were used as latent variables. It is assumed that MPL is a consequence of geekism, therefore the model applies geekism as the basis. At the same time this suggests, that the three components of MPL are correlated with each other (reflective). The factor loadings of the three components (*intimacy, passion, commitment*) on the respective items were investigated. DiStefano, Zhu and Mindrila (2009) state that the decision to use a cut- off value for factor loadings is always arbitrary. In the scope of this study, it is only pursued to test the model behind the MPL scale developed by Lastovicka and Sirianni (2011), therefore a lenient cut-off

value of 0.5 was used. As can be seen in figure 6, two items don't meet this standard: Item 13 and 14 of the subscale *intimacy* have factor loadings below 0.5.

Figure 6: Confirmatory factor analysis of MPL scale



4. Discussion

The aim of this study was to investigate the relationship between geekism and MPL. Based on the assumption that hedonism is an antagonist to geekism, the relationship between hedonism and MPL was likewise explored. By that, the two constructs geekism and hedonism are compared on the level of MPL. The main results suggest that geekism is associated with a high level of *intimacy* and that hedonism is associated with a moderate level of *passion*.

In the following, the findings for each hypothesis are described separately in more detail. Although the data from the Stroop Task is not significant, it is also included in this description to gain a broader view on the results.

The first hypothesis (‘*Geekism is associated with a high level of intimacy’)* is confirmed by the results from the linear regression analysis and likewise the data from the Stroop Task, although they are not significant, suggest that geekism is associated with a high level of *intimacy*. However, using the implicit PSE score geekism as predictor in the linear regression analysis, no significant results were found. Considering the validity of these results, it has to be stipulated that the first hypothesis gains affirmation from both explicit measures (questionnaires) and implicit measures (Stroop Task). In the context of the used multi method approach, it can be concluded that the evidence for the first hypothesis, can be assessed as reliable, because the same phenomenon is observed by different methods, which enhances the accuracy (cp. Jick, 1979).

Taking contemporary literature into account, it can be noted that declarations in the literature also confirm the first hypothesis. First of all, it is important to note that *intimacy* is the emotional component of the *triangular theory of love* (Sternberg, 1986). Emotions play an important role in geekism, as becomes evident in Passlick (2013). In this study participant M., as a self-proclaimed geek, states: ‘(…) And in the end it worked out well and I was unbelievably happy and the pc did well for about a year.’ (Passlick, 2013; p.19). Further, as has already been mentioned in the introduction, it is said that *intimacy* with possessions can be gained by knowing the beloved possession both physically and intellectually (Lastovicka and Sirianni, 2011) and Schmettow et al. (2013) state, that geeks have a strong urge to understand the inner workings of their products. Relating these two observations to each other, it can be concluded, that knowing the inner workings of a beloved product can be seen as knowing it both physically and intellectually and thus it can be interpreted as having an intimate relationship to the beloved possession.

For the second hypothesis (‘*Geekism is associated with a high level of passion’)* no significant results were found in the linear regression analyses. The data from the Stroop Task, however, suggest an association between geekism and a high level of *passion*. Certainly, this evidence is too weak to confirm the hypothesis.

Taking a look at the literature concerning this topic, it can be stated that reasonable clues exist to formulate the second hypothesis. In a qualitative interview study by Passlick (2013) it becomes evident that *passion* plays an important role in geekism. Participant M., as a self-proclaimed geek, states for instance: ‘When I tried something out and notice „I’m understanding it“.... and then modifying it or building something new into it.... to customize devices as I want them to be and ultimately this moment in which it works out for the first time – that’s always a really beautiful moment.’ (Passlick, 2013; p.22). This quote expresses the *passion* participant M. feels while alienating and re-using devices and items for his own use; it becomes clear that gaining a greater understanding of the workings of the computer motivates M. to further improve it. Furthermore, both, Passlick (2013; p.22) as well as Schmettow et al. (2013; p.4) use formulations like ‘strong desire’ or ‘strong urge’ to describe the motivations geeks have directed at their technical products. The author of this study has concluded that these motivational drives can be seen as a form of *passion*. However, considering that no significant results were found, it can be wondered whether this conclusion is justifiable. Maybe having *passion* for a product includes deeper motivations and attachments than warranted by the observations of Passlick (2013) and Schmettow et al. (2013). Future research has to investigate this topic.

Moreover, it is important to note that the data from the implicit measures (Stroop Task), although not significant, are confirmative of the second hypothesis and thus suggest an association between geekism and a high level of *passion*. Based on these observations, it can be hypothesized that the characteristic *passion* can best be measured implicitly, because in explicit measures complex cognitive operations mediate between reading an item and setting a mark on a questionnaire (Lucas and Baird, 2005), which can cause biased results. A sensitive topic like MPL is especially vulnerable for effects like social desirability, for instance, and since the data collection was most of the time conducted in group sessions, this could have been an issue (cp. section 4.1). Therefore it is suggested that *passion* can best be measured implicitly.

For the third hypothesis (‘*Geekism is associated with a low level of commitment.’)* no significant results were found in the linear regression analyses. The results from the Stroop

Task, however, suggest that geekism is associated with a high level of *commitment* and thereby the data are contradictory to the hypothesis. These data don't reach the appointed level of significance though; therefore the evidence is too weak to refute the third hypothesis.

Taking a look at the literature concerning the relationship between geekism and *commitment*, the author of this study sided with Myers (1985), who said that the degree of attachment to a specific object can change over time. In accordance with that, Kleine, Kleine III and Allen (1995) mention that there is general agreement between investigators that attachments are used by individuals to define and maintain their identities. Since identities develop, the author of the study at hand hypothesizes, that different products are important at different times in one's life. Further Kleine et al. (1995) find that affiliation, autonomy and past, present or future temporal orientation can all be of psychological significance in material possession attachment. It can be noted that this taxonomy is quite similar to the one Schultz et al. (1989) propose (cp. introduction, section 1.2: individuation, integration and temporal orientation). Further, this taxonomy illustrates the alternating degree of attachment to a material possession. However, as was said in the introduction, Myers (1985) standpoint, considering the alternating degree of attachment to one object over time, was seen as a contradiction to Lastovicka and Sirianni (2011), who note that *commitment* is a devotion to keep the possession and plays an important role in MPL (cp. section 1.3). The author of this study wonders by now whether these two viewpoints have to be seen as contradictory. One could also suggest that, since *commitment* presumably plays a great role in MPL, special products are kept, but that at the same time new products are bought. By that, the degree of attachment to a specific object changes over time, but still the attachment is still so strong, that the object won't be sold (cp. MPL scale, Item 16: "I can't imagine selling my X"). Based on these considerations, the author of this study concludes that it could also be hypothesized that geekism is associated with a high level of *commitment.* Future research is needed to get a clear view on this topic.

For the fourth hypothesis (*'Hedonism is associated with a low level of intimacy')* no significant results were found in the linear regression analyses. The data from the Stroop Task indicate that there is only a weak association between hedonism and a high level of *intimacy*.

Taking the literature about this topic into account, it has to be noted that clues exist to expect that hedonism is associated with a low level of *intimacy*. Hassenzahl (2004b) states that hedonists are interested in superficial characteristics such as aesthetics, the pleasure they

gain from using the technical product or the social image they obtain by owning it. In contrast to that in the article by Lastovicka and Sirianni (2011) it becomes evident that *intimacy* can be gained by knowing the beloved possession both physically and intellectually. Pulling these two studies together, it seems reasonable to conclude that hedonists don't know their beloved possessions so deeply that they understand their workings intellectually.

The reasons for not finding significant results for the fourth hypothesis can lie in the validity of the used measuring method. The confirmatory factor analysis on the MPL scale, for instance, revealed that item 13 and 14 of the subscale *intimacy* don't reach the appointed factor loadings of 0.5. This issue will be discussed more deeply in section 4.1..

The fifth hypothesis (*'Hedonism is associated with a high level of passion.')* is confirmed by the data from the explicit tests, however, it is found that the association is rather moderate. Contrary, the data from the implicit tests is not in accordance with that. Firstly, the linear regression analysis with the PSE score geekism as predictor shows a significant negative correlation coefficient, indicating that hedonism is associated with a low level of *passion* (cp. section 3.3). Secondly, the data from the Stroop Task suggests that the association between hedonism and a high level of *passion* is quite weak. With the used multi method approach in mind, the evidence for the fifth hypothesis can be assessed as weak, because different methods show different results (cp. Jick, 1979). Based on these ambiguous results, it has to be concluded, that a more thoroughly investigation is needed to gain satisfactory evidence for the fifth hypothesis.

Taking a look at the literature, only limited information concerning the association between hedonism and *passion* can be found. Law et al. (2009) state that important themes in hedonism are the more superficial characteristics, such as aesthetics and social identity. Further, Sternberg (1986) notes that passion is the drive that triggers attraction. Therefore it can be concluded that hedonists experience *passion* for good designs of products, for entertainment and the social image they can obtain by owning a special possession. Thus, people, who score high on hedonism, are attracted to a product, because of its hedonistic qualities. This attraction can also be seen as a *passion* for the product.

For the sixth hypothesis (*'Hedonism is associated with a high level of commitment')* no significant results were found in the linear regression analyses. The data from the Stroop Task suggest that the hypothesis should be refuted. It shows namely that the association

between hedonism and a high level of *commitment* is quite weak. However, these results are too weak to refute the hypothesis.

Reasons for not finding significant results for the last hypothesis can lie in the validity of the used measuring method. Hedonism for instance was measured by the respective subscale of the SVS. It can be suggested that this scale is not appropriate for use in the context of the study at hand. This point will be discussed more deeply in section 4.1.

Summing up, the two main results of the study suggest firstly, that geekism is associated with a high level of *intimacy* and secondly, that hedonism is associated with a moderate level of *passion*. In the following, the two main results are related to each other, in order to get a more thoroughly picture of the relationship between geekism and hedonism on the level of MPL. Thereby Sternberg's (1986) distinction between *intimacy* and *passion* is used: It was noted that in the context of the *triangular theory of love*, *intimacy* can be seen as the emotional component, whereas *passion* is the motivational component. Further, Sternberg (1986) assumes that a high level of *intimacy* alone creates friendship and that a high level of *passion* alone creates infatuation (cp. section 1.2). Concerning the results at hand, it is concluded that geeks, who are associated with a high level of *intimacy*, are more emotionally attached to their technological products than hedonists. Geeks' use of their products is an expression of an intimate relationship and thus the use as such is the main purpose of this attachment. It could also be concluded, that this attachment has the character of a good friendship, where simply the contact with the beloved counterpart is enough and no hidden benefits are pursued. In contrast to that, hedonists are associated with a moderate level of *passion*. They form attachments with their products, which are motivated by higher reasons that are indeed closely tied to the product, but are not exclusively focused on the product. A hedonist is interested in the aims he can reach by using the product, such as entertainment or social approval, and not in the use as such. It is also assumed that a hedonist's attachment to his possession is based on infatuation: A hedonist falls in love with a product because of superficial characteristics, such as a visually pleasing design or a hip brand. However, this love is shallow and blind for the 'inner values'.

In the following a few general results and observations of the study are discussed. Starting with the significant gender effect, it can be noted that male participants scored significantly higher on geekism than female participants (cp. section 3.1). The literature

concerning this topic is quite sparsely. Although one has to be quite cautious with any hasty conclusions, sometimes a gender effect can be seen indirectly in the methods of contemporary literature. Passlick (2013), as has already been mentioned, did a qualitative interview study to explore the concept geekism. He interviewed ten self-proclaimed geeks and as it turned out all interviewees were male. Hence, although it is too early to draw a conclusion, based on Passlick (2013) and the study at hand, a tendency towards a gender effect can be assumed. However, further research is needed, to investigate this topic more deeply. One possibility could be a longitudinal study, to explore the development of boys and girls and the different stimulation adults offer to them.

Moreover, one basic assumption of this study was that geekism and utilitarianism have a lot in common, as has been stated in the introduction. Based on this assumption the concept utilitarianism was excluded from subsequent investigations (cp. section 1.1). The necessary question is, whether this assumption is warranted. Support that the utilitarian concept exists comes from different studies. Venkatesh, Morris, Davis and Davis (2003) for example discuss the Technology Acceptance Model (TAM), which states that perceived ease-of-use and utility are the main factors in people's choice to use a product. Further, Fu and Gray (2004) found that users favor generalized over specialized procedures and prefer continuous feedback on their actions, in order to have less cognitive effort of planning sequences of actions and imagining the outcome. Thus, evidence exists that users thrive for efficiency and effectiveness and thus handle utilitarian criteria in the selection of a product. Relating this to the concept geekism, one has to note, that geekism and utilitarianism have different sources of reward: geeks are driven by intrinsic reward (Schmettow et al., 2013), whereas utilitarianism aims at 'extrinsic sources of reward' (Carroll and Rosson, 1987). Further, utilitarianists prefer to have less cognitive effort (Fu and Gray, 2004), which is opposed to geekism. Schmettow et al. (2013) state namely that the geek personality enjoys intellectually demanding tasks and they also suggest that high scores on the Need for cognition scale can be seen as an approximation for geek predispositions. Hence, it can be concluded, that important differences between utilitarianism and geekism exist and that the decision to exclude utilitarianism from the investigation could have been overhasty. Further research should relate to that topic in order to gain more insights into the relationship between geekism and utilitarianism.

Furthermore, it is important to stipulate that the study at hand could not replicate the findings of Schmettow et al. (2013) (cp. section 3.3). Rather it was found that people, who score high on NCS have fast reaction times on geekism words, whereas, concerning the prime

category geekism, slow reaction times were found. However, it is noteworthy that these results don't reach statistical significance; therefore they should be interpreted with caution. Further research is needed to gain a secure evidence base.

Lastly, the results have shown, that using both the MPL score and the PSE score geekism as independent variables to predict geekism yields an R^2 of 0.59 (cp. section 3.3). Concerning the association between the PSE score geekism and geekism, an R^2 of 0.29 was found. Thus, it can be concluded that together MPL and the PSE score geekism explain almost 60 percent of the variance of geekism, whereas the PSE score geekism alone explains only 30 percent of the variance of geekism. This difference illustrates that MPL has predictive value for geekism and is presumably an important part of geekism. With future research in mind, it can be concluded that the concept geekism is probably not one-dimensional, but is made up of different concepts. One of these concepts is probably MPL.

4.1 Limitations and future research

The study at hand has several limitations and weak points. In the following, their implications for the validity of the study will be pointed out and discussed.

First of all, the sample consisted of only 21 students of technical studies. However, this group is of great importance for the study, because it is hypothesized that students of technical studies show a lot characteristics associated with geekism. Therefore, investigating this group can yield valuable insights into geekism. Further, the sample method was by convenience. Most respondents were found via private contacts and self-selection might play a role due to financial incentives for the students of technical studies. For future research it should be striven for a sample with more students of technical studies.

Secondly, the PSE as well as the geekism questionnaire were used for the first time in this study. While they were faithfully developed (Keil, 2013; Sander, 2013), it is important to note that they are not extensively validated. The results gained from these measures and the subsequent analyses, thus, should be interpreted with caution.

Thirdly, the construct hedonism was measured by the correspondent subscale of the SVS, which consists of only three items (Schwartz, 1992). While the SVS is extensively validated, the chance exists that these three items don't give a valid view of the hedonism trait. A replication of the study should measure hedonism more thoroughly, since it plays an

important role in this study. Further, it has to be considered whether the SVS is valid in the context of the present study. While it was used in a wide variety of contexts (Schwartz, 1994), it was never used within the scope of Human Computer Interaction. This fact could have influence on the validity of the results and should be considered in subsequent studies. A replication of this study, should try to validate the SVS in the context of Human Computer Interaction.

Fourthly, the confirmatory factor analysis on the MPL scale revealed that the model behind the scale can be confirmed in general. However, the factor loadings of two items didn't reach the appointed standards: Items 13 and 14 of the subscale *intimacy* reached factor loadings below 0.5. It is important to stipulate that this probably had influence on the results. However, by hindsight, it is impossible to estimate the actual consequences. Future research should address this issue by investigating the validity of the MPL scale.

Fifthly, the SVS as well as the MPL scale were translated from English into German and Dutch. Although two independent native speakers were involved into the translation process and their translations were faithfully combined, the chance always exists that special meanings that are conveyed in the English versions aren't captured in the translations. This can go on the expense of the validity of the scales. In the scope of the present study, however, it was not possible to validate the translations of the SVS and the MPL scale. It is the task of future research to catch that up.

Sixthly, since the data collection was done in group sessions most of the time, social desirability could have played a role. It was observed, that especially the sensitive topic MPL provoked a lot of amusement under the respondents, which might have had influence on their way of answering the MPL scale. Due to practical and financial reasons, however, it was inevitable to do the data collection in group sessions. A replication of this study should pursue to collect the data individually in order to keep the chances of bias due to social desirability at a minimum.

4.2 Implications for the future

This study is only a first step in the investigation of the personality trait geekism. However, it gives confirmative evidence that this trait exists and supposes that future research should keep following this way by investigating geekism in the context of technological

products more deeply, since it offers great chances for the future. As technological products become increasingly important, the knowledge and the enthusiasm of geeks can help improve the developing process of technology. Thereby the quality and function of technological products, that might one day be important for all of us, can be enhanced.

Further, by gaining deeper insights into the motivational structure geekism, geeks can be better supported in order to develop their talent fully and to increase their potential. Moreover, based on that knowledge, a design theory for geeks can be developed, that explores what geeks want to have in a product. It could be assumed, for instance, that geeks are in favor of interactive products that have settings that can be individually adapted to their special needs.

Furthermore, by comparing geekism and hedonism on the level of MPL, insights are gained into how different technology users attach to their products. That information can offer valuable insights for producers of technological products. Devices can be developed that are adapted to the individual needs and wishes of the particular user. Thereby the benefit of using technological products can be increased.

Considering the study at hand, it is important to note that mainly the attitudes of geeks were investigated. However, stating that geekism is a personality trait, it can be suggested that behavior also plays an important role, since, personality traits are not only expressed by attitudes but also by concrete actions and behaviors. Or as Stagner (1961, p.7) defines it: ‘a trait is a consistent and persistent pattern of behavior and experience (cognitive and affective) characteristic of a particular individual’. In accordance with that, Schmettow et al. (2013) describe the active way of geeks to modify products for their own means and thus they stress the importance of the behavior of geeks. Although the Stroop Task measured reaction time and therefore behavior, a more concrete analysis of geeks’ behavior is needed in matters of everyday life. Hence, future research should pursue to gain more insights not only into the attitudes of geeks, but also into the concrete behaviors they show. By that the knowledge about geekism is extended and it can be more readily established as a personality trait. Further, knowing more about geeks’ typical behavior, offers new opportunities for measuring and analyzing this trait. Field studies, for instance, are possible, to investigate how geeks behave in certain situations and how this behavior differs from people with other characteristic traits.

Although the investigation of the personality trait geekism is important and certainly should be pursued, this article cannot finish without warning about the potential negative

consequences of this endeavor. Research exploring differences between people always bears the risk, that the results could be misinterpreted by the general public or misused for different purposes. Since being able to classify people on the basis of personality traits could also promote stigmatizing and could lead to the social exclusion of minority groups. Thus, it is important to stipulate that this article has no intention to promote any stereotypical or stigmatizing ideas about particular groups of people.

4.3 Conclusion

In summary, following Schmettow et al. (2013) the study at hand successfully investigated geekism and hedonism as personality traits and reached more insights into both concepts and the relation between them. Further, based on Lastovicka and Sirianni (2011), the *triangular theory of love* by Sternberg (1986) was effectively used in the context of MPL and insights were gained about the role MPL plays concerning geekism and hedonism. The main results of this study suggest that geekism is associated with a high level of *intimacy* and that hedonism is associated with a moderate level of *passion*. Following studies on the topic of geekism might use these findings as a basic framework in order to gain deeper insights into the concept geekism and into how technology users attach to their products. However, it has been stipulated that several limitations could potentially have influenced the results and thus further research is inevitable to gain a more secure evidence base for the results.

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6. Appendix

6.1 Syntax

Syntax for the subscales

```
COMPUTE Passion= (SUM( MPL_Item1 , MPL_Item2 , MPL_Item3 , MPL_Item4 , MPL_Item5 , MPL_Item6)) /6.

EXECUTE.

COMPUTE Intimacy= (SUM( MPL_Item7 , MPL_Item8 , MPL_Item9 , MPL_Item10 , MPL_Item11 , MPL_Item12 , MPL_Item13 , MPL_Item14)) /8.
EXECUTE.

COMPUTE Commitment= (SUM( MPL_Item15 , MPL_Item16 , MPL_Item17)) / 3.
EXECUTE.

COMPUTE Hedonismus= (SUM( SVS_Vergnügen , SVS_LebenGenießen , SVS_Masslos)) / 3.
EXECUTE.

COMPUTE Geekism= (SUM( Geekism_Item1 , Geekism_Item2 , Geekism_Item3 , Geekism_Item4 , Geekism_Item5 , Geekism_Item6 , Geekism_Item7 , Geekism_Item8 , Geekism_Item9 , Geekism_Item10 , Geekism_Item11 , Geekism_Item12 , Geekism_Item13 , Geekism_Item14 , Geekism_Item15 , Geekism_Item16 , Geekism_Item17 , Geekism_Item18 , Geekism_Item19 , Geekism_Item20 , Geekism_Item21 , Geekism_Item22 , Geekism_Item23 , Geekism_Item24 , Geekism_Item25 , Geekism_Item26 , Geekism_Item27 , Geekism_Item28 , Geekism_Item29 , Geekism_Item30 , Geekism_Item31 , Geekism_Item32 , Geekism_Item33 , Geekism_Item34)) /34.
EXECUTE.
```

PSE - H.U.G.-Werte/Worte

```
COMPUTE p1_h_corrected=p1_h / p1_words * 1000.
COMPUTE p1_u_corrected=p1_u / p1_words * 1000.
COMPUTE p1_g_corrected=p1_g / p1_words * 1000.

COMPUTE p2_h_corrected=p2_h / p2_words * 1000.
COMPUTE p2_u_corrected=p2_u / p2_words * 1000.
COMPUTE p2_g_corrected=p2_g / p2_words * 1000.

COMPUTE p3_h_corrected=p3_h / p3_words * 1000.
COMPUTE p3_u_corrected=p3_u / p3_words * 1000.
COMPUTE p3_g_corrected=p3_g / p3_words * 1000.

COMPUTE p4_h_corrected=p4_h / p4_words * 1000.
COMPUTE p4_u_corrected=p4_u / p4_words * 1000.
```

```
COMPUTE p4_g_corrected=p4_g / p4_words * 1000.

COMPUTE p5_h_corrected=p5_h / p5_words * 1000.
COMPUTE p5_u_corrected=p5_u / p5_words * 1000.
COMPUTE p5_g_corrected=p5_g / p5_words * 1000.

COMPUTE p6_h_corrected=p6_h / p6_words * 1000.
COMPUTE p6_u_corrected=p6_u / p6_words * 1000.
COMPUTE p6_g_corrected=p6_g / p6_words * 1000.

COMPUTE p7_h_corrected=p7_h / p7_words * 1000.
COMPUTE p7_u_corrected=p7_u / p7_words * 1000.
COMPUTE p7_g_corrected=p7_g / p7_words * 1000.

COMPUTE p8_h_corrected=p8_h / p8_words * 1000.
COMPUTE p8_u_corrected=p8_u / p8_words * 1000.
COMPUTE p8_g_corrected=p8_g / p8_words * 1000.

COMPUTE p9_h_corrected=p9_h / p9_words * 1000.
COMPUTE p9_u_corrected=p9_u / p9_words * 1000.
COMPUTE p9_g_corrected=p9_g / p9_words * 1000.

COMPUTE p10_h_corrected=p10_h / p10_words * 1000.
COMPUTE p10_u_corrected=p10_u / p10_words * 1000.
COMPUTE p10_g_corrected=p10_g / p10_words * 1000.

COMPUTE p11_h_corrected=p11_h / p11_words * 1000.
COMPUTE p11_u_corrected=p11_u / p11_words * 1000.
COMPUTE p11_g_corrected=p11_g / p11_words * 1000.

COMPUTE p12_h_corrected=p12_h / p12_words * 1000.
COMPUTE p12_u_corrected=p12_u / p12_words * 1000.
COMPUTE p12_g_corrected=p12_g / p12_words * 1000.

COMPUTE p13_h_corrected=p13_h / p13_words * 1000.
COMPUTE p13_u_corrected=p13_u / p13_words * 1000.
COMPUTE p13_g_corrected=p13_g / p13_words * 1000.

COMPUTE p14_h_corrected=p14_h / p14_words * 1000.
COMPUTE p14_u_corrected=p14_u / p14_words * 1000.
COMPUTE p14_g_corrected=p14_g / p14_words * 1000.

COMPUTE p15_h_corrected=p15_h / p15_words * 1000.
COMPUTE p15_u_corrected=p15_u / p15_words * 1000.
COMPUTE p15_g_corrected=p15_g / p15_words * 1000.
EXECUTE.
```

PSE - H.U.G.-Gesamtscores

```
COMPUTE hedonism_pse_total= Sum(p1_h_corrected, p2_h_corrected, p3_h_corrected,
p4_h_corrected, p5_h_corrected, p6_h_corrected,  p7_h_corrected,

p8_h_corrected,  p9_h_corrected,  p10_h_corrected,  p11_h_corrected,  p12_h_corrected,
p13_h_corrected,  p14_h_corrected,  p15_h_corrected) /8.


COMPUTE utilitarianism_pse_total= Sum(p1_u_corrected, p2_u_corrected, p3_u_corrected,
p4_u_corrected, p5_u_corrected, p6_u_corrected,  p7_u_corrected,

p8_u_corrected,  p9_u_corrected,  p10_u_corrected,  p11_u_corrected,  p12_u_corrected,
p13_u_corrected,  p14_u_corrected,  p15_u_corrected) /8.


COMPUTE geekism_pse_total= Sum(p1_g_corrected, p2_g_corrected, p3_g_corrected,
p4_g_corrected, p5_g_corrected, p6_g_corrected,  p7_g_corrected,

p8_g_corrected,  p9_g_corrected,  p10_g_corrected,  p11_g_corrected,  p12_g_corrected,
p13_g_corrected,  p14_g_corrected,  p15_g_corrected) /8.


EXECUTE.
```

Syntax for the regression analyses

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zIntimacy
  /METHOD=ENTER zGeekim.
EXECUTE.
```

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zPassion
  /METHOD=ENTER zGeekism.
EXECUTE.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zCommitment
  /METHOD=ENTER zGeekism.
EXECUTE.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zIntimacy
  /METHOD=ENTER zHedonismus.
EXECUTE.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zPassion
  /METHOD=ENTER zHedonismus.
EXECUTE.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zCommitment
  /METHOD=ENTER zHedonismus.
EXECUTE.
```

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT zPassion
  /METHOD=ENTER zHimpl.
  EXECUTE.

  REGRESSION
    /MISSING LISTWISE
    /STATISTICS COEFF OUTS R ANOVA
    /CRITERIA=PIN(.05) POUT(.10)
    /NOORIGIN
    /DEPENDENT zGeekism
    /METHOD=ENTER zMPL zGimpl.
  EXECUTE.
```

Syntax for Generalized Estimating Equations

```
* Generalized Estimating Equations.
GENLIN RT BY HUG primeCat (ORDER=ASCENDING) WITH ZIntimacy Trial Age
  /MODEL HUG primeCat ZIntimacy Trial Age HUG*ZIntimacy primeCat*ZIntimacy
HUG*primeCat*ZIntimacy INTERCEPT=YES
 DISTRIBUTION=NORMAL LINK=IDENTITY
  /CRITERIA SCALE=MLE PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012
ANALYSISTYPE=3(WALD) CILEVEL=95 LIKELIHOOD=FULL
  /REPEATED SUBJECT=Subj SORT=YES CORRTYPE=EXCHANGEABLE
ADJUSTCORR=YES COVB=ROBUST MAXITERATIONS=100 PCONVERGE=1e-
006(ABSOLUTE) UPDATECORR=1
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
EXECUTE.
```

```
* Generalized Estimating Equations.
GENLIN RT BY HUG primeCat (ORDER=ASCENDING) WITH ZPassion Trial Age
  /MODEL HUG primeCat ZPassion Trial Age HUG*ZPassion primeCat*ZPassion
HUG*primeCat*ZPassion INTERCEPT=YES
 DISTRIBUTION=NORMAL LINK=IDENTITY
  /CRITERIA SCALE=MLE PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012
ANALYSISTYPE=3(WALD) CILEVEL=95 LIKELIHOOD=FULL
  /REPEATED SUBJECT=Subj SORT=YES CORRTYPE=EXCHANGEABLE
ADJUSTCORR=YES COVB=ROBUST MAXITERATIONS=100 PCONVERGE=1e-
006(ABSOLUTE) UPDATECORR=1
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
EXECUTE.


* Generalized Estimating Equations.
GENLIN RT BY HUG primeCat (ORDER=ASCENDING) WITH ZCommitment Trial Age
  /MODEL HUG primeCat ZCommitment Trial Age HUG*ZCommitment
primeCat*ZCommitment HUG*primeCat*ZCommitment INTERCEPT=YES
 DISTRIBUTION=NORMAL LINK=IDENTITY
  /CRITERIA SCALE=MLE PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012
ANALYSISTYPE=3(WALD) CILEVEL=95 LIKELIHOOD=FULL
  /REPEATED SUBJECT=Subj SORT=YES CORRTYPE=EXCHANGEABLE
ADJUSTCORR=YES COVB=ROBUST MAXITERATIONS=100 PCONVERGE=1e-
006(ABSOLUTE) UPDATECORR=1
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO SUMMARY SOLUTION.
EXECUTE.


* Generalized Estimating Equations.
GENLIN RT BY HUG primeCat (ORDER=ASCENDING) WITH ZNCS Trial Age
  /MODEL HUG primeCat ZNCS Trial Age HUG*ZNCS primeCat*ZNCS
HUG*primeCat*ZNCS INTERCEPT=YES
 DISTRIBUTION=NORMAL LINK=IDENTITY
  /CRITERIA SCALE=MLE PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012
ANALYSISTYPE=3(WALD) CILEVEL=95 LIKELIHOOD=FULL
  /REPEATED SUBJECT=Subj SORT=YES CORRTYPE=EXCHANGEABLE
ADJUSTCORR=YES COVB=ROBUST MAXITERATIONS=100 PCONVERGE=1e-
006(ABSOLUTE) UPDATECORR=1
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO SUMMARY SOLUTION.
EXECUTE.
```

6.2 Translations of Schwartz Value Scale

Dutch Version

In deze vragenlijst moet je jezelf afvragen: „Welke waarden zijn voor mijzelf belangrijk als leidinggevende principes in mijn leven en welke waarden zijn minder belangrijk?“ Achter elke waarde staat in haakjes een verklaring, die je kan helpen de betekenis van de waarde te begrijpen. Jouw opgave is het om aan te geven hoe belangrijk elke waarde is voor jou *als leidinggevend principe in jouw leven.* Daarvoor moet je gebruik maken van de volgende scala:

- 0 betekent dat de waarde helemaal niet belangrijk is voor jou en niet relevant is als leidinggevend principe
- 3 betekent dat de waarde belangrijk is
- 6 betekent dat de waarde heel belangrijk is

Hoe hoger het nummer (0, 1, 2, 3, 4, 5, 6), hoe belangrijker is de waarde voor jou als leidinggevend principe.

- -1 kan je gebruiken om aan te geven, dat bepaalde waarden tegengesteld zijn aan jouw leidinggevende principes.
- 7 kan je gebruiken om aan te geven, dat bepaalde waarden van het grootste aanbelang zijn als leidinggevende principes in jouw leven; *gewoonlijk zijn er niet meer dan twee van deze waarden.*

Geef voor elke waarde het nummer aan, die het belang van de waarde voor jou persoonlijk het beste weergeeft.

Voor je begint, lees eerst alle waarden door. Kies de waarde, die voor jou het belangrijkst is en geef een nummer aan. Daarna kies de waarde, die tegengesteld is aan je waardes en geef -1 aan. Als je geen waarde vindt die je met -1 wilt beoordelen, kies dan de waarde die het minst belangrijk is voor jou en beoordeel deze met 0 of 1. Vervolgens beoordeel de rest van de waardes.

Autonomie

VRIJHEID (Vrijheid van het handelen en denken)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

CREATIVITEIT (uniciteit, voorstellingsvermogen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

ONAFHANKELIJK (zelfstandig, autonoom)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

DE EIGEN DOELEN KIEZEN (eigen bestemming kiezen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

NIEUWGIERIG (in alles geïnteresseerd, exploreren)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

Stimulatie

EEN OPWINDEND LEVEN (stimulerende ervaringen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

EEN AFWISSELEND LEVEN (gevuld met uitdagingen en nieuwe dingen, veranderingen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

VERMETELHEID (Avontuur en risico zoeken)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

Hedonismus

PLEZIER (Vervulling van wensen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

VAN HET LEVEN GENIETEN (Eten, seks, vrije tijd genieten)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

MATELOOS (plezierige dingen doen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

Success

AMBITIEUS (zeer arbeidzaam, dynamisch)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

INVLOEDRIJK (invloed hebben op andere mensen en gebeurtenissen)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

DRAAGKRACHTIG (competent, effectief, efficiënt)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

SUCCESVOL (doelen bereiken)

- ○ -1 tegengesteld aan mijn waarden
- ○ 0 niet belangrijk
- ○ 1
- ○ 2
- ○ 3 belangrijk
- ○ 4
- ○ 5
- ○ 6 heel belangrijk
- ○ 7 van het grootste aanbelang

German version

In diesem Fragebogen sollst du dich selber fragen: „Welche Werte sind MIR wichtig als leitende Prinzipien in MEINEM Leben und welche Werte sind mir weniger wichtig?“ Nach jedem Wert steht in Klammern eine Erklärung, die dir helfen kann die Bedeutung des Wertes zu verstehen. Deine Aufgabe ist es anzugeben, wie wichtig jeder Wert für dich ist *als leitendes Prinzip in deinem Leben*. Dafür sollst du die folgende Skala benutzen:

- 0 bedeutet, dass der Wert überhaupt nicht wichtig ist für dich und nicht relevant ist als leitendes Prinzip
- 3 bedeutet, dass der Wert wichtig ist
- 6 bedeutet, dass der Wert sehr wichtig ist

Je höher die Nummer (0, 1, 2, 3, 4, 5, 6), desto wichtiger ist der Wert für dich als leitendes Prinzip in deinem Leben.

- -1 kannst du benutzen um anzugeben, dass bestimmte Werte gegensätzlich sind zu den Prinzipien, die dich leiten.
- 7 kannst du benutzen um anzugeben, dass bestimmte Werte von höchster Wichtigkeit sind als leitende Prinzipien in deinem Leben; *gewöhnlich gibt es nicht mehr als zwei solcher Werte.*

Gebe für jeden Wert die Nummer (-1,0,1,2,3,4,5,6,7) an, die der Wichtigkeit des Wertes für dich persönlich am besten entspricht.

Bevor du beginnst, lies dir alle Werte einmal durch. Wähle den Wert, der am wichtigsten für dich ist, und gebe eine Nummer dafür an. Dann wähle den Wert, der gegensätzlich zu deinen Werten ist und gebe -1 an. Wenn du keinen Wert findest, den du mit -1 bewerten willst, dann wähle den Wert, der am wenigsten wichtig für dich ist und bewerte ihn mit 0 oder 1. Dann beurteile den Rest der Werte.

Selbstbestimmung

KREATIVITÄT (Einzigartigkeit, Vorstellungsvermögen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

UNABHÄNGIG (selbstständig, autark)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

DIE EIGENEN ZIELE WÄHLEN (eigene Bestimmung wählen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

NEUGIERIG (an allem interessiert, erforschen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

Stimulation

EIN AUFREGENDES LEBEN (stimulierende Erfahrungen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

EIN ABWECHSULNGSREICHES LEBEN (gefüllt mit Herausforderungen, neuen Dingen und Veränderung)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

WAGEMUT (Abenteuer und Risiko suchen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

Hedonismus

VERGNÜGEN (Erfüllung von Wünschen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

DAS LEBEN GENIESSEN (Essen, Sex, Freizeit genießen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

MASSLOS (angenehme Dinge machen)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

Erfolg

ERGEIZIG (sehr fleißg, aufstrebend)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

EINFLUSSREICH (Einfluss haben auf andere Menschen und Geschehnisse)

○ -1 entgegengesetzt zu meinen Werten
○ 0 nicht wichtig
○ 1
○ 2
○ 3 wichtig
○ 4
○ 5
○ 6 sehr wichtig
○ 7 von höchster Wichtigkeit

LEISTUNGSFÄHIG (kompetent, effektiv, effizient)

- ○ -1 entgegengesetzt zu meinen Werten
- ○ 0 nicht wichtig
- ○ 1
- ○ 2
- ○ 3 wichtig
- ○ 4
- ○ 5
- ○ 6 sehr wichtig
- ○ 7 von höchster Wichtigkeit

ERFOLGREICH (Ziele erreichen)

- ○ -1 entgegengesetzt zu meinen Werten
- ○ 0 nicht wichtig
- ○ 1
- ○ 2
- ○ 3 wichtig
- ○ 4
- ○ 5
- ○ 6 sehr wichtig
- ○ 7 von höchster Wichtigkeit

6.3 Translations of Material Possession Love Scale

Dutch version

Welke van de volgende vier toestellen bezit je?

- ○ Laptop
- ○ PC
- ○ Tablet
- ○ Smartphone

Welk van de vier toestellen is het belangrijkst voor je?

- ○ Laptop
- ○ PC
- ○ Tablet
- ○ Smartphone

In de volgende vragen heeft het ´X´ altijd betrekking op dat tostel wat het belangrijkst is voor jou.

1. Als ik mijn X gebruik, voel ik mij opgewonden.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

2. Ik kan mij niet vorstellen, dat iets anders wat ik bezit, mij zo gelukkig maakt als mijn X.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

3. Soms vind ik het al leuk, als ik mijn X alleen maar zie.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

4. Ik hou van het gevoel mijn X te gebruiken.

○ ○ ○ ○ ○ ○

Helemaal mee oneens helemaal mee eens

5. Als ik niet met mijn X bezig zijn kan, verlang ik ernaar.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

6. De dag dat ik mijn X kocht, was als een droom die werkelijkheid werd.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

7. Ik ken details over mijn X, die voor de meeste andere mensen niet interessant zouden zijn.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

8. Ik hou ervan dingen voor mijn X te kopen.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

9.Ik zorg ervoor dat mijn X op de juiste manier werkt.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

10. Ik werk om zeker te gaan dat mijn X er gaaf eruitziet.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

11. Ik heb het gevoel, dat ik mijn X echt begrijp.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

12. Ik hou ervan tijd met mijn X door te brengen.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

13. Ik vind het geen probleem mijzelf en mijn financiële middelen met mijn X te delen.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

14. Ik ben altijd geïnteresseerd om meer over mijn X te leren.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

15. Ik zou mijn X liever voor altijd willen houden.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

16. Ik kan het mij niet voorstellen om mijn X te verkopen.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

17. Mijn X kun je niet zomaar vervangen.

○ ○ ○ ○ ○ ○

helemaal mee oneens helemaal mee eens

German Version

Welche von den folgenden vier Geräten besitzt du?

- ○ Laptop
- ○ PC
- ○ Tablet
- ○ Smartphone

Welches von den vier Geräten ist dir persönlich am wichtigsten?

- ○ Laptop
- ○ PC
- ○ Tablet
- ○ Smartphone

Im Folgenden bezieht sich das `X` jeweils immer auf das Gerät, das dir persönlich am wichtigsten ist.

1. Meinen/ mein X zu benutzen ‘turnt mich an‘.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

2. Ich kann mir nicht vorstellen, dass irgendwas was ich besitze, mich so glücklich macht, wie mein X.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

3. Manchmal bin ich sehr aufgeregt, wenn ich meinen/ mein X nur sehe.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

4. Ich mag das Gefühl meinen/ mein X zu benutzen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

5. Wenn ich nicht mit meinem X beschäftigt sein kann, sehne ich mich danach.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

6. An dem Tag als ich meinen/ mein X gekauft habe, ging ein Traum für mich in Erfüllung.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

7. Ich kenne Details von meinem X, die für die meisten anderen Leute nicht interessant sind.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

8. Ich mag es besonders, Dinge für meinen/ mein X zu kaufen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

9. Ich arbeite um sicher zu gehen, dass mein X richtig funktioniert.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

10. Ich arbeite um sicher zu gehen, dass mein X cool aussieht.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

11. Ich habe das Gefühl, dass ich meinen/mein X wirklich verstehe.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

12. Ich mag es Zeit mit meinem X zu verbringen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

13. Ich bin glücklich, dass ich mich selbst und meine finanziellen Mittel mit meinem X teilen kann.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

14. Ich bin immer daran interessiert mehr über meinen/ mein X zu lernen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

15. Ich würde meinen/ mein X gerne für immer behalten.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

16. Ich kann mir nicht vorstellen mein X zu verkaufen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

17. Mein X ist nicht zu ersetzen.

○ ○ ○ ○ ○ ○

stimme überhaupt nicht zu stimme total zu

6.4 SmartPLS

Quality Criteria

Overview

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
Commitment	0,680673	0,864677	0,165542	0,766266	0,680672	0,110605
Geekism	0,073709	0,518517		0,590979	0,073708	
Intimacy	0,425145	0,818368	0,239900	0,744464	0,425145	0,097142
Passion	0,464624	0,838194	0,250345	0,775812	0,464625	0,093819

Redundancy

	redundancy
Commitment	0,110605
Geekism	
Intimacy	0,097142
Passion	0,093819

Cronbachs Alpha

	Cronbachs Alpha
Commitment	0,766266
Geekism	0,590979
Intimacy	0,744464
Passion	0,775812

Latent Variable Correlations

	Commitment	Geekism	Intimacy	Passion
Commitment	1,000000			
Geekism	0,406868	1,000000		
Intimacy	0,155056	0,489796	1,000000	
Passion	0,322786	0,500345	0,499566	1,000000

R Square

	R Square
Commitment	0,165542

Geekism	
Intimacy	0,239900
Passion	0,250345

Cross Loadings

	Commitment	Geekism	Intimacy	Passion
"Geek01"	0,163907	0,218926	0,153531	0,008715
"Geek02"	0,061521	0,099994	-0,002479	-0,141806
"Geek03"	0,226046	0,497190	0,180198	0,187165
"Geek04"	-0,103639	0,265501	0,198682	0,064610
"Geek05"	0,166834	0,329296	0,060163	0,142237
"Geek06"	0,165660	0,399085	0,343994	0,084839
"Geek07"	-0,140948	-0,006425	0,096735	-0,098571
"Geek08"	0,019188	-0,139112	-0,110771	-0,106464
"Geek09"	-0,007279	-0,099345	-0,160170	-0,117508
"Geek10"	-0,021822	0,266130	0,080633	0,101085
"Geek11"	0,111978	0,183190	0,185651	0,054519
"Geek12"	0,061601	-0,003652	-0,010947	0,112617
"Geek13"	0,003094	0,260276	0,170210	0,099021
"Geek14"	-0,059178	0,264898	0,120844	-0,073544
"Geek15"	0,102340	0,127710	0,034069	-0,000352
"Geek16"	-0,090503	0,232224	0,129019	0,239375
"Geek17"	0,043092	0,106704	0,073735	0,141545
"Geek18"	0,092453	0,343615	0,060217	0,156616
"Geek19"	0,182980	0,368276	0,094535	0,098235
"Geek20"	-0,204902	-0,172125	0,081706	-0,185337
"Geek21"	0,183425	0,185961	0,027934	0,075043
"Geek22"	-0,072024	0,114789	0,041815	-0,038091
"Geek23"	-0,114553	0,049460	-0,019377	0,032117
"Geek24"	0,106094	0,003013	-0,008112	-0,033150
"Geek25"	0,193786	0,436210	0,196236	0,058645
"Geek26"	0,092594	0,222924	-0,083807	-0,022171
"Geek27"	0,144091	0,226369	0,135637	0,156461
"Geek28"	0,092447	0,326442	0,233520	0,164499
"Geek29"	0,075890	0,296439	0,040297	0,119743
"Geek30"	0,176883	0,308009	0,052022	0,139739
"Geek31"	0,224807	0,429454	0,301059	0,322268
"Geek32"	0,081839	0,375904	0,109243	0,090880
"Geek33"	-0,088371	-0,467741	-0,250868	-0,267472
"Geek34"	-0,136729	-0,225819	0,056628	-0,223074

"MPL01"	0,260432	0,318827	0,321474	0,649624
"MPL02"	0,237194	0,314577	0,290104	0,705463
"MPL03"	0,002863	0,151287	0,450446	0,665642
"MPL04"	0,270614	0,263791	0,365896	0,711527
"MPL05"	0,146855	0,361284	0,378590	0,749352
"MPL06"	0,273046	0,454748	0,295165	0,597641
"MPL07"	0,055588	0,423421	0,821008	0,346042
"MPL08"	0,004095	0,387378	0,803899	0,529656
"MPL09"	0,127777	0,380440	0,784304	0,167136
"MPL10"	0,161746	0,356965	0,671635	0,284983
"MPL11"	0,070584	0,234215	0,702451	0,241815
"MPL12"	0,272990	0,252606	0,585096	0,511998
"MPL13"	0,085642	0,250974	0,376401	0,250097
"MPL14"	-0,118481	-0,115671	-0,192798	-0,403533
"MPL15"	0,813818	0,306461	0,014926	0,278720
"MPL16"	0,856883	0,322893	0,019768	0,214216
"MPL17"	0,803412	0,369797	0,315535	0,300507

AVE

	AVE
Commitment	0,680673
Geekism	0,073709
Intimacy	0,425145
Passion	0,464624

Communality

	communality
Commitment	0,680672
Geekism	0,073708
Intimacy	0,425145
Passion	0,464625

Total Effects

	Commitment	Geekism	Intimacy	Passion
Commitment				
Geekism	0,406868		0,489796	0,500345
Intimacy				
Passion				

Composite Reliability

	Composite Reliability
Commitment	0,864677
Geekism	0,518517
Intimacy	0,818368
Passion	0,838194

Outer Loadings

	Commitment	Geekism	Intimacy	Passion
"Geek01"		0,218926		
"Geek02"		0,099994		
"Geek03"		0,497190		
"Geek04"		0,265501		
"Geek05"		0,329296		
"Geek06"		0,399085		
"Geek07"		-0,006425		
"Geek08"		-0,139112		
"Geek09"		-0,099345		
"Geek10"		0,266130		
"Geek11"		0,183190		
"Geek12"		-0,003652		
"Geek13"		0,260276		
"Geek14"		0,264898		
"Geek15"		0,127710		
"Geek16"		0,232224		
"Geek17"		0,106704		
"Geek18"		0,343615		
"Geek19"		0,368276		
"Geek20"		-0,172125		
"Geek21"		0,185961		
"Geek22"		0,114789		
"Geek23"		0,049460		
"Geek24"		0,003013		
"Geek25"		0,436210		
"Geek26"		0,222924		
"Geek27"		0,226369		
"Geek28"		0,326442		
"Geek29"		0,296439		

"Geek30"		0,308009		
"Geek31"		0,429454		
"Geek32"		0,375904		
"Geek33"		-0,467741		
"Geek34"		-0,225819		
"MPL01"				0,649624
"MPL02"				0,705463
"MPL03"				0,665642
"MPL04"				0,711527
"MPL05"				0,749352
"MPL06"				0,597641
"MPL07"			0,821008	
"MPL08"			0,803899	
"MPL09"			0,784304	
"MPL10"			0,671635	
"MPL11"			0,702451	
"MPL12"			0,585096	
"MPL13"			0,376401	
"MPL14"			-0,192798	
"MPL15"	0,813818			
"MPL16"	0,856883			
"MPL17"	0,803412			

Outer Model (Weights or Loadings)

	Commitment	Geekism	Intimacy	Passion
"Geek01"		0,218926		
"Geek02"		0,099994		
"Geek03"		0,497190		
"Geek04"		0,265501		
"Geek05"		0,329296		
"Geek06"		0,399085		
"Geek07"		-0,006425		
"Geek08"		-0,139112		
"Geek09"		-0,099345		
"Geek10"		0,266130		
"Geek11"		0,183190		
"Geek12"		-0,003652		
"Geek13"		0,260276		
"Geek14"		0,264898		

"Geek15"	0,127710		
"Geek16"	0,232224		
"Geek17"	0,106704		
"Geek18"	0,343615		
"Geek19"	0,368276		
"Geek20"	-0,172125		
"Geek21"	0,185961		
"Geek22"	0,114789		
"Geek23"	0,049460		
"Geek24"	0,003013		
"Geek25"	0,436210		
"Geek26"	0,222924		
"Geek27"	0,226369		
"Geek28"	0,326442		
"Geek29"	0,296439		
"Geek30"	0,308009		
"Geek31"	0,429454		
"Geek32"	0,375904		
"Geek33"	-0,467741		
"Geek34"	-0,225819		
"MPL01"			0,649624
"MPL02"			0,705463
"MPL03"			0,665642
"MPL04"			0,711527
"MPL05"			0,749352
"MPL06"			0,597641
"MPL07"		0,821008	
"MPL08"		0,803899	
"MPL09"		0,784304	
"MPL10"		0,671635	
"MPL11"		0,702451	
"MPL12"		0,585096	
"MPL13"		0,376401	
"MPL14"		-0,192798	
"MPL15"	0,813818		
"MPL16"	0,856883		
"MPL17"	0,803412		

Path Coefficients

	Commitment	Geekism	Intimacy	Passion
Commitment				
Geekism	0,406868		0,489796	0,500345
Intimacy				
Passion				

Latent Variable Scores

Commitment	Geekism	Intimacy	Passion
-1,178188	-2,102049	-1,391436	-1,233213
-0,472584	-0,917116	-0,801019	-0,542737
1,992988	0,618990	-0,238040	0,180132
0,110942	0,690874	0,303730	0,229825
-0,709872	-1,251529	-0,537765	-0,106154
-1,178188	-1,376751	-0,163197	-0,861826
-1,178188	-1,545013	-0,794946	-0,045747
-0,944030	0,641818	-0,991507	0,719174
0,114072	1,517447	1,694803	1,403722
-0,706742	-2,594261	-1,183967	-0,686335
1,403202	0,261664	-0,173135	-0,641874
1,179042	0,605437	-0,927535	0,216017
0,344492	0,531589	0,304464	-0,213401
0,348230	0,208619	-0,671659	2,512264
2,227146	1,497992	-0,601063	1,985052
1,179042	0,772833	-1,257220	-0,661141
-0,706742	-0,765884	-0,802601	-1,293621
-0,944030	0,116277	-1,297796	-1,021132
1,169044	-1,145806	-0,565844	-1,021371
2,342356	0,694875	0,042408	0,504691
1,056964	0,409509	-0,472401	0,428098
1,162176	0,829607	1,731932	-0,820686
1,518412	0,332512	0,333068	-0,372477
-0,944030	-0,259515	0,356657	-0,820447
-1,178188	0,466803	1,085233	0,062648
0,114072	2,222508	1,311080	1,559945
-0,706742	-0,263285	0,291043	-0,430031
0,934886	0,915712	1,069490	1,059906
0,110942	1,039192	2,295967	1,551870

-0,472584	-2,102834	-0,089905	-0,702281
-0,940900	-0,539041	-0,548011	-0,482329
0,226152	-0,984665	-0,932095	-0,974532
0,351360	-1,727637	0,757511	0,454760
2,101938	0,051390	-0,561979	0,334421
-0,472584	-0,937131	-0,665734	0,669456
-0,940900	-0,820202	-0,197449	-0,158452
1,640490	1,639327	1,784746	1,574697
0,354490	-0,147911	0,778538	-0,801180
0,924888	1,083668	2,174393	3,388717
-0,706742	0,830990	1,272697	-0,265699
-1,178188	-1,169318	-0,628609	-0,960963
-1,178188	-0,167688	-0,701503	0,237662
0,941145	0,325248	-0,262449	0,386048
-0,706742	0,851856	2,442718	1,953021
-0,357374	-0,957484	-0,094968	1,332395
-0,472584	0,313021	0,752218	-0,661141
0,354490	0,424452	-0,941376	-1,073669
-0,709872	-0,357725	-1,014630	-1,453165
-1,178188	0,367072	-1,257220	-0,201970
0,707596	-0,150337	-0,606772	0,442383
0,463440	0,026828	-0,588096	-1,021371
-1,178188	0,645047	0,980113	-0,157781
0,120331	-0,122598	0,655230	-0,075501
-0,940900	-0,057037	-0,942826	-0,636415
-0,944030	-0,584903	-0,830687	-0,460457
-0,357374	1,838518	-0,897867	-0,388891
0,690730	0,487845	1,605689	-0,163240
-0,475713	-0,439886	-0,507562	-0,532022
-1,178188	0,640559	0,798484	-0,262377
-0,475713	0,748521	1,022108	0,471888
-0,472584	-1,160995	-0,703451	-1,453165

Outer Weights

	Commitment	Geekism	Intimacy	Passion
"Geek01"		0,107625		
"Geek02"		-0,034687		
"Geek03"		0,201549		
"Geek04"		0,064372		

"Geek05"	0,124011		
"Geek06"	0,204831		
"Geek07"	-0,043629		
"Geek08"	-0,073382		
"Geek09"	-0,103179		
"Geek10"	0,059750		
"Geek11"	0,120519		
"Geek12"	0,055965		
"Geek13"	0,098738		
"Geek14"	-0,001241		
"Geek15"	0,042793		
"Geek16"	0,107546		
"Geek17"	0,091598		
"Geek18"	0,107054		
"Geek19"	0,125033		
"Geek20"	-0,100143		
"Geek21"	0,092621		
"Geek22"	-0,020519		
"Geek23"	-0,029458		
"Geek24"	0,016636		
"Geek25"	0,150348		
"Geek26"	-0,010647		
"Geek27"	0,149643		
"Geek28"	0,172421		
"Geek29"	0,081338		
"Geek30"	0,123166		
"Geek31"	0,294487		
"Geek32"	0,097343		
"Geek33"	-0,215369		
"Geek34"	-0,102665		
"MPL01"			0,253048
"MPL02"			0,249676
"MPL03"			0,120075
"MPL04"			0,209368
"MPL05"			0,286746
"MPL06"			0,360927
"MPL07"		0,260364	
"MPL08"		0,238200	
"MPL09"		0,233935	
"MPL10"		0,219499	
"MPL11"		0,144020	

"MPL12"		0,155329
"MPL13"		0,154325
"MPL14"		-0,071127
"MPL15"	0,372287	
"MPL16"	0,392249	
"MPL17"	0,449228	

Index Values

Results

Measurement Model (restandardised)

	Commitment	Geekism	Intimacy	Passion
"Geek01"		0,017255		
"Geek02"		0,003138		
"Geek03"		0,020029		
"Geek04"		0,009730		
"Geek05"		0,012132		
"Geek06"		0,010384		
"Geek07"		-0,000235		
"Geek08"		-0,004166		
"Geek09"		-0,003335		
"Geek10"		0,009019		
"Geek11"		0,005784		
"Geek12"		-0,000291		
"Geek13"		0,014703		
"Geek14"		0,007161		
"Geek15"		0,003775		
"Geek16"		0,008551		
"Geek17"		0,003055		
"Geek18"		0,008435		
"Geek19"		0,010435		
"Geek20"		-0,009791		
"Geek21"		0,007463		
"Geek22"		0,004221		
"Geek23"		0,002311		
"Geek24"		0,000069		
"Geek25"		0,013683		
"Geek26"		0,005514		

"Geek27"		0,010408		
"Geek28"		0,009714		
"Geek29"		0,009383		
"Geek30"		0,008089		
"Geek31"		0,010509		
"Geek32"		0,021347		
"Geek33"		-0,018859		
"Geek34"		-0,006417		
"MPL01"				0,515203
"MPL02"				0,769925
"MPL03"				0,972852
"MPL04"				0,542201
"MPL05"				0,574804
"MPL06"				0,450798
"MPL07"			0,453045	
"MPL08"			0,776133	
"MPL09"			0,449985	
"MPL10"			0,650231	
"MPL11"			0,483320	
"MPL12"			0,408222	
"MPL13"			0,383742	
"MPL14"			-0,014784	
"MPL15"	0,511864			
"MPL16"	0,518363			
"MPL17"	0,624827			

Path Coefficients

	Commitment	Geekism	Intimacy	Passion
Commitment				
Geekism	0,049954		0,027724	0,026575
Intimacy				
Passion				

Measurement Model

	Commitment	Geekism	Intimacy	Passion
"Geek01"		0,084917		
"Geek02"		0,015442		

"Geek03"	0,098567		
"Geek04"	0,047882		
"Geek05"	0,059706		
"Geek06"	0,051104		
"Geek07"	-0,001157		
"Geek08"	-0,020501		
"Geek09"	-0,016411		
"Geek10"	0,044383		
"Geek11"	0,028463		
"Geek12"	-0,001432		
"Geek13"	0,072354		
"Geek14"	0,035240		
"Geek15"	0,018577		
"Geek16"	0,042082		
"Geek17"	0,015033		
"Geek18"	0,041511		
"Geek19"	0,051352		
"Geek20"	-0,048182		
"Geek21"	0,036726		
"Geek22"	0,020770		
"Geek23"	0,011373		
"Geek24"	0,000341		
"Geek25"	0,067339		
"Geek26"	0,027138		
"Geek27"	0,051219		
"Geek28"	0,047805		
"Geek29"	0,046176		
"Geek30"	0,039808		
"Geek31"	0,051717		
"Geek32"	0,105051		
"Geek33"	-0,092810		
"Geek34"	-0,031582		
"MPL01"			0,134666
"MPL02"			0,201247
"MPL03"			0,254288
"MPL04"			0,141723
"MPL05"			0,150245
"MPL06"			0,117832
"MPL07"		0,126200	
"MPL08"		0,216199	
"MPL09"		0,125348	

"MPL10"		0,181128
"MPL11"		0,134633
"MPL12"		0,113714
"MPL13"		0,106895
"MPL14"		-0,004118
"MPL15"	0,309273	
"MPL16"	0,313200	
"MPL17"	0,377527	

Latent Variable Scores (unstandardised)

	Commitment	Geekism	Intimacy	Passion
Case 0	1,000000	-37,004558	1,000000	1,150245
Case 1	1,931747	-22,617756	1,568254	1,684723
Case 2	4,935673	-8,336095	2,170979	2,105765
Case 3	2,618547	1,400948	2,645297	2,111566
Case 4	1,618547	-25,759743	1,904531	2,082199
Case 5	1,000000	-23,493705	2,242251	1,401277
Case 6	1,000000	-27,935189	1,586068	2,090721
Case 7	1,309273	-0,727770	1,345957	2,539455
Case 8	2,622473	5,056489	3,961177	2,921851
Case 9	1,622473	-50,200643	1,248348	1,655566
Case 10	4,241020	-7,063867	2,105176	1,551522
Case 11	4,112366	-1,255531	1,489876	1,897960
Case 12	2,758980	-8,395937	2,679294	1,908063
Case 13	2,931747	-11,094851	1,704753	3,974362
Case 14	5,244947	7,120002	1,729725	3,179365
Case 15	4,112366	1,462138	1,125348	1,535943
Case 16	1,622473	-15,626120	1,636143	1,141723
Case 17	1,309273	-5,685906	1,130515	1,342969
Case 18	3,931747	-26,188586	1,866207	1,259554
Case 19	5,313200	-0,018488	2,374787	2,582470
Case 20	3,867420	-12,036604	1,976525	2,090684
Case 21	3,755053	1,893685	3,921817	1,394220
Case 22	4,309273	-3,605842	2,750383	1,829166
Case 23	1,309273	-18,504282	2,618438	1,477635
Case 24	1,000000	-0,683448	3,367976	2,095738
Case 25	2,622473	8,164766	3,604229	3,160560
Case 26	1,622473	-17,177559	2,748166	1,660832
Case 27	3,622473	-2,382420	3,369317	2,820854

Case 28	2,618547	3,886207	4,612084	3,005515
Case 29	1,931747	-43,527900	2,307623	1,543000
Case 30	1,313200	-13,515309	1,884373	1,693245
Case 31	2,686800	-14,608160	1,466491	1,425169
Case 32	2,935673	-46,362511	3,063101	2,493254
Case 33	4,996073	-9,772393	1,922053	2,046739
Case 34	1,931747	-15,812365	1,896609	2,442751
Case 35	1,313200	-19,824882	2,187597	2,114612
Case 36	4,554220	10,525844	3,860231	3,007523
Case 37	2,939600	-10,936857	3,206824	1,493214
Case 38	3,441853	1,895681	4,396086	4,786437
Case 39	1,622473	1,844177	3,549579	1,940476
Case 40	1,000000	-14,437798	1,680106	1,268076
Case 41	1,000000	-11,407600	1,696386	2,183196
Case 42	3,630326	-4,455772	2,029791	2,350275
Case 43	1,622473	-3,918310	4,636312	3,686723
Case 44	2,000000	-25,173400	2,227429	3,022100
Case 45	1,931747	-0,780511	3,058969	1,535943
Case 46	2,939600	-0,396694	1,487410	1,291968
Case 47	1,618547	-11,342357	1,364410	1,000000
Case 48	1,000000	-4,737902	1,125348	1,852012
Case 49	3,489893	-7,080668	1,827832	2,471121
Case 50	3,000000	-20,415373	1,820721	1,259554
Case 51	1,000000	-0,536839	3,381290	1,778663
Case 52	2,630326	-8,577492	3,089713	1,764549
Case 53	1,313200	-8,753099	1,480026	1,353495
Case 54	1,309273	-15,785002	1,581658	1,670609
Case 55	2,000000	11,980141	1,476472	1,653775
Case 56	3,132580	-2,205891	4,021142	1,976691
Case 57	1,927820	-9,250095	1,919352	1,687444
Case 58	1,000000	-0,281850	3,144575	1,843490
Case 59	1,927820	0,777979	3,194698	2,322590
Case 60	1,931747	-18,867642	1,608834	1,000000

Index Values for Latent Variables

	LV Index Values
Commitment	2,475996

Geekism	-10,041828
Intimacy	2,361912
Passion	2,026413