The influence of social work on the adoption of innovations

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The influence of social network on the adoption of innovations

Master thesis

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Contents

Abstract

In order to assess the viability of a selective small scale introduction approach of an innovation, more insights in the specifics of the mechanisms involved regarding the adoption of innovations within companies and the role of social networks in the adoption process are needed.

As such, a two-stage model was developed in which the launch strategy influences the assessment of innovation qualities (which are Triability, Simplicity, Compatibility, Observable result and Relative advantage), by taking into account from which source information regarding the innovation is gathered during the information gathering process. The second stage of the model hypothesizes that a higher score on innovation qualities leads to a higher retention rate of participants. Based on this model, two hypotheses are formulated. The first hypothesis is that the launch strategy influences the assessment of innovation qualities. The second stage of the model relates to the effect of innovation qualities on retention of participants. It is expected that a higher assessment of innovation qualities is related to a more beneficial assessment of the overall quality of the product and thus is related to a prolonged use. In order to answer the research questions regarding the effect of the introduction strategy on the perception of innovation qualities and the subsequent effect on retention rate of an innovation, an experimental approach using two 'treatments' in the form of different launch strategies is used. This will enable a comparison between the two introduction strategies.

There is partial evidence for a relationship between introduction strategy and innovation quality assessment. The analyses resulted in a significant effect of introduction strategy on the Compatibility and Observable result qualities. For the Relative advantage, Triability and Simplicity qualities there was insufficient evidence in support of the hypotheses. For the relationship between innovation quality assessment and retention several prediction were made. The predictions regarding Simplicity and Triability (both no effect) qualities were confirmed by the regression models. For Compatibility and Observable result the predictions (both a positive effect) regarding the relationship were not confirmed by the regression models. It was expected that the Relative advantage quality would have a significant positive effect on retention. The two regression models give partial evidence for this hypothesis. The results do suggest that in the early stages of the lifecycle the introduction strategy does have an effect on the decision whether or not to adopt the innovation, but the focus shifts more to innovation qualities that can be viewed to be tangible product qualities during the later stages in the lifecycle.

The findings of this research contribute to current scientific knowledge in several areas. First it gives new insight in the importance of the introduction strategy on innovation quality assessment and its importance in the early stages of the product lifecycle. The practical implications of this study mainly arise from the notion that different introduction strategies indeed have an influence at innovation quality assessment and thus have an impact at the adoption and subsequent continuation decisions that an user makes over the lifecycle of the product.

1 Introduction

1.1 General introduction

It is widely accepted that exercising has a positive effect on physical and mental wellbeing. However, 57 percent of the Dutch population aged over 12 years old does not meet the daily minimum requirement of thirty minutes of movement on a moderate intensity (Mulder, 2013). Here, the term movement is deliberately chosen, as it is not specifically necessary to exercise. Thus, general movement of moderate intensity (e.g. walking the stairs) already significantly contributes to physical and mental wellbeing. There is a direct relationship between movement and physical wellbeing in that the least active persons also display the most problems with their health (Mulder, 2013). Direct relationships have been shown on stroke, several types of cancer, diabetes and depressions (Wendel-Vos, 2013). More indirect, not meeting the requirement affects blood pressure, weight and cognitive ability which may in turn lead to future health problems (Wendel-Vos, 2013).

These effects gain recognition from several angles. Governments respond by starting campaigns to point out the importance of healthy behaviors, healthcare professionals strive to educate people about the dangers of having excessive weight and lack of movement, and NPO's like the Dutch Hearth Foundation back up these actions. Health and fitness centers pick up these trends and respond by pushing their existing programs through more extensive marketing and advertising. However, pushing the existing programs only reaches part of the target group. The large majority is not very keen to start exercising as it is a large step from their current unhealthy habits. For this group a more natural growth strategy towards more movement is needed, offering a low threshold. This means less emphasis on exercise, but instead looking for small improvements in everyday movement. In the long term, this should lead towards a structural improvement towards a healthier lifestyle.

1.2 Improving wellbeing according to Beweegze

In response to the aforementioned trends, Beweegze was developed. Beweegze uses a different approach to stimulating people to move more often. It rewards small improvements in movement patterns and provides low-key insight into these patterns in order for individuals to assess their behaviors. Key aspect for Beweegze is that every improvement, even very small ones, count towards change of unhealthy behaviors. It doesn't emphasize the necessity to start exercising, but instead encourages individuals to look for improvements in their daily life. For instance, taking the stairs instead of the elevator is registered and rewarded by the system. Whereas current practice towards stimulating people to move more often usually takes on a directive approach (e.g. pointing out health issues related to not moving enough, and expect compliance to norms) or competitive approach (comparing individuals against one another). The problem with current practices is that they use a negative approach towards the individual. In addition, the reward for the individual is quite distant in the future and as a consequence compliance drops because people tend to want quick results.

Beweegze utilizes a different, more motivating approach in persuading people to alter their movement patterns for the better. The platform gives insights in the movement pattern, provides an incentive to making (small) improvements in the movement pattern and helps people to set their own goals, all from the motto that every form of movement is good. Beweegze strives to keep a low threshold for people to start moving. In addition, movement also directly leads towards an extrinsic

reward as every bit of movement counts in generating points. It is hoped that the instant reward helps in motivating towards more moving and, ultimately, the higher goal of gaining health improvement.

The following elements together form the system behind Beweegze: (1) A pedometer; while the pedometer is not new, the development of recent years in communication technology has opened new possibilities to interact with the meter and to access the data that this meter generates. (2) A specialized software platform to which the meter synchronizes; the platform gives insight in the movement pattern of the participant and generates points for each unit of movement. The points can be accumulated in a specialized savings account. (3) An online shop where the saved points can be spent giving discounts on the purchase of the items found in the shop. The elements of which Beweegze consists off, in this specific combination (the pedometer, platform and point system), is new to the world.

1.3 Company context

Beweegze started out as a result of a corporate innovation of a healthcare company that recognized the earlier mentioned trends regarding unhealthy behaviors, and found an innovative combination of existing ideas and technologies that offer a different approach in changing these unhealthy behaviors. This was recognized as a business opportunity and thus a new, stand alone, business entity was formed to further develop the concept. Positioned as a start-up with the health-care organization as a stock-holder, Beweegze is a new entrant in the health-maintenance market. Currently, the team consists of four members which further develop the concept, in close cooperation with IT-suppliers for the components like the platform and pedometer. The main focus is currently on product-development, with the launch of Beweegze planned in the second quarter of 2014.

One of the challenges for the team besides developing the concept was to develop a business model targeting long term corporate sustainability for the new business entity and its stakeholders. This means that besides the higher social goals of Beweegze, it is also a product in the sense that it has to attain to organizational and stakeholder goals. In the next section, the business model behind Beweegze is explained in more detail.

1.4 Problem analysis

The cornerstone of the business model is formed by the point system in combination with the online shop. As people start moving and exercising they accumulate points. These points can be spent in the online shop to receive a discount over regular sales prices. Examples of products which are offered in the shop are sports apparel and holiday vouchers. For every purchase, Beweegze receives a percentage of the sales price. This model is similar to for example the systems used in the Netherlands by Shell and Douwe Egbert with respectively their loyalty programs for gasoline and coffee. The system of Beweegze thus combines the higher goal of motivating people to move and exercise more, whilst attaining to the organizational goals of Beweegze at the same time (generating revenue through the Beweegze shop, by the spending of points by participants).

Beweegze builds upon a business to business sales model which could bring about different mechanisms towards adoption compared to a situation in which end consumers are directly targeted. The product is offered to companies that want to actively promote movement amongst

employees in order to promote healthy behaviors, which in turn could lead to lower costs due to absenteeism (Goossen, 2012). From a sales perspective, the business to business model is interesting because investments have to be made in order to participate in the platform for each individual. If an individual wants to start using Beweegze, the purchase price is €105,-. For an individual, this investment is quite large and forms a barrier to purchase Beweegze.

The business to business model encompasses that the product is targeted at medium to large size companies that are planning to or are already offering their employees means to work on their health. For a participating company, this means that a fairly large portion of the workforce has to participate in order to reap the benefits of a better lifestyle through reduced absenteeism and higher productivity. The reason that a large portion of the workforce needs to participate in order to benefit on both absenteeism and productivity is that on an individual level the improvements made in lifestyle behaviors need not translate significantly into reduced absenteeism or increased productivity. However, combining the individual effects on the workforce level could indeed result in a significant result regarding these measures, where a percent point increase in productivity or decrease in absenteeism translates into respectively significant additional earnings or savings. Extra complicating factor is the fact that the individuals that can benefit the most from an improved lifestyle (and thus are responsible for the benefits in terms of increased productivity and decreased absenteeism) are difficult to reach on a voluntary basis. This is further complicated by the notion that, from a moral perspective, companies cannot force their workforce to participate in lifestyle programs. They merely have the ability to give incentives for participating and creating circumstances which enable the workforce to make a choice regarding participating. This, as such, means that companies need a strategy for the diffusion of Beweegze throughout the company in order to achieve the goal of a healthier workforce and the associated benefits.

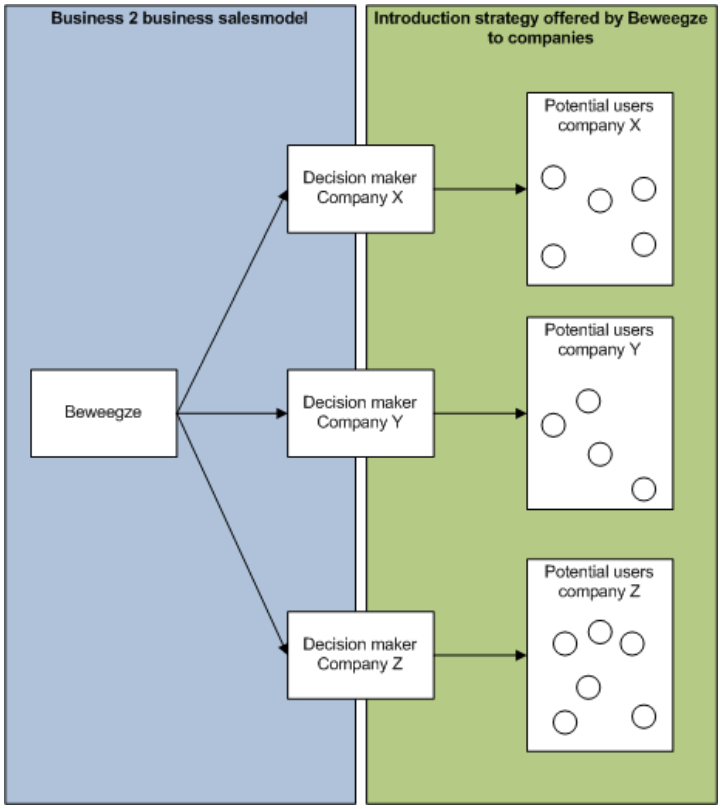

Figure 1: relation B2B sales and introduction strategy

A second argument for developing a strategy for the introduction of Beweegze in companies is found in that a lot of companies already have adopted some form of lifestyle improvement program but with only moderate success at best (Goossen, 2012). A clear, transparent and sound launch strategy could help participating companies to successfully implement a new lifestyle improvement program. This strategy is thus needed in a business to business sales model in order to set Beweegze apart from other lifestyle programs. The relationship between the business to business sales model and the introduction strategy is depicted in Figure 1. At first glance, the launch strategy shows similarities with the adoption of innovations in an end-consumer market. This is because end-consumers have autonomy regarding trial and adoption of innovation and need to be persuaded to initiate trial as is the case within companies when looking at participating in lifestyle programs.

1.4.1 General problem statement

The above discussion gives a general direction for an explanation of the mechanism involved in the adaption of innovations. Looking back on the problem analysis regarding the strategy of Beweegze, there is a need for an introduction strategy for companies willing to participate in Beweegze that copes with the autonomy of individual employees regarding their choice to participate while adhering to the organizational goal of a healthier workforce. This implies a multi-layer problem. Companies need to be convinced by a good introduction strategy that delivers on the promises made by Beweegze regarding the benefits for participating companies. Beweegze is looking for a blueprint introduction strategy that helps its potential customers to introduce Beweegze in the company with the goal of companywide adoption.

Treacy and Wiersema (1997) have developed a model in order for companies to determine where to place focus in their business strategy. As Beweegze strives to optimize their processes as to keep costs associated with logistics and sales as low as possible, the main focus is placed on the operational excellence value proposition, following the work of Treacy and Wiersema (1997). By expanding the concept of operational excellence to the implementation strategy Beweegze is able to further optimize the internal business processes by using a blueprint strategy that can be reused in various settings. A blueprint strategy mitigates the need for Beweegze to develop an implementation strategy from scratch for every customer, aiding in the standardization of processes within Beweegze.

This leads to the following assignment formulated from the viewpoint of Beweegze:

Develop a strategy in order to facilitate adoption of Beweegze throughout participating companies that maximizes the likelihood of companywide adoption under the condition that the autonomy of individual employees to participate in life style programs is maintained.

The most prudent question regarding the introduction strategy is whether to choose a passive or active approach. The passive approach would imply introducing the possibility to participate on the individual level using traditional marketing methods such as large scale advertisement, information leaflets etc. This approach is often used when introducing lifestyle programs, with moderate success at most (Goossen, 2012). The active approach on the other hand would be for companies to carefully select and persuade key individuals for initial trial and in thus giving guidance to the adoption process. For an active approach it is questionable if it is possible to influence the first mover process

in order to create better circumstances for wider adoption throughout the company. And also, taking the target groups specific properties of adverse behaviors regarding lifestyle interventions into account, which strategy is most efficient in reaching these individuals. More specific this can be formulated in terms of a question posed by Beweegze in case an active strategy is chosen: are there individuals that can be targeted specifically and in turn help in the adoption process companywide using peer to peer conversations in their social network?

The active approach looks promising a-priori because it overcomes the shortcomings of the often used passive approach regarding introduction of lifestyle programs. However, in order to assess the viability of the active approach, more insights in the specifics of the mechanisms involved in the adoption of innovations within companies and the role of social networks in the adoption process are needed. These insights in turn can shape the introduction strategy for Beweegze in participating companies and thus filling in this part in the sales strategy. This project is aimed towards developing the necessary knowledge to create this introduction strategy.

1.4.2 Research problem statement

As a start, a more in-depth literature review was performed. In order to guide the literature review, a problem statement has been developed to enable subsequent theory building. The master's thesis research project contributes by developing insights into the active approach. The initial research question was formulated as follows:

"How do the social networking behaviors of first movers influence the diffusion of innovations throughout organizations?"

In the above problem statement the start-up problem is reflected; how is the initial group of peers formed. Second, the problem statement incorporates the notion of the diffusion of innovations and the expected role of the social network as a means to convey information regarding the innovation.

In order to further guide the literature research, two subsequent research questions have been formulated. The first question is aimed at gaining more insight in the current knowledge about the mechanisms involved in the adoption of innovations.

Literature question 1: What is the current body of knowledge concerning the adoption of innovations?

Important facets are to determine if the adoption follows a specific process and if there is a specific process, what moderating factors there are in this adoption process. Thus the following sub questions have been formulated in order to facilitate the literature review:

Literature sub question 1.1: what are current theoretical models regarding the adoption of innovations?
Literature sub question 1.2: what are important factors in the adoption process?

The second research question is geared toward obtaining insights in the current knowledge of social networks. How do social networks influence the transfer of knowledge between actors and does this influence the actions taken by an individual actor.

Literature question 2: What is the current body of knowledge concerning social networks?

In order to further guide this part of the literature review concerning social networks, this research question is also divided into the following sub questions:

Literature sub question 2.1: what are current theoretical models regarding social networks?

Literature sub question 2.2: which connections are there between social network interaction and adoption of innovations, based on earlier research?

2 Model development

A first overview of the literature regarding the diffusion of innovation gives some insights in the mechanisms involved in the adoption of innovations throughout populations. In a meta-analysis on the diffusion of innovation in healthcare organizations, Greenhalgh, Robert, Macfarlane, Bate, and Kyriakidou (2004) found that the diffusion of innovations in organizations displays similarities with the diffusion of innovations in the marketplace, confirming the earlier stipulated similarities between end-consumer and intra-company adoption of innovations. This encompasses that the diffusion of Beweegze within companies can be regarded as an innovation diffusion process. While the research of Greenhalgh et al. (2004) was mainly focused on the diffusion of innovations in healthcare organizations, the meta-analysis includes general research about the diffusion of innovation within organizations, thus validating the findings for application in a broader sense. Below, the two dominant theories regarding the adoption of innovations are briefly treated.

2.1 The diffusion of innovations

Rogers (2003), proposed a broadly accepted model regarding the diffusion of innovations in the marketplace. He defined innovations as ideas and practices that are perceived to be novel by its audience. Next several “qualities” are identified that make innovations spread out: (1) Relative advantage, which is defined as the degree to which the innovation surpasses its predecessor. (2) Compatibility, the degree to which the innovation adheres to norms and values of the audience. (3) Simplicity, how easy to understand and use the innovation is. (4) Triability, the degree to which the innovation can be tried out or experimented with. (5) Observable results, the ability of the innovation to show its benefits towards the audience. If an innovation performs well on several of these qualities, its adaptation probability is enhanced. Another important insight noted by Rogers (2003) is the importance of peer to peer conversations and peer networks. While traditional marketing and advertising methods help to spread information about the innovation, this does not necessarily trigger adoption of the innovation. The adoption of an innovation is mainly enabled by peer to peer conversations, thus displaying social network like behaviors. The mechanism behind this finding is explained by the management of risk and uncertainty. If one receives credible reassurances that trial and use doesn’t lead to adverse effects, one is more inclined towards the first trial. In this perspective, a good evaluation of an innovation by peers is more valuable in initiating trial. This might indicate that good evaluations in the social network can have a higher impact than marketing and advertisement would. The use of the peer to peer evaluation perspective also shapes the view on the adoption process in the population. For example, this could give interesting insights which can aid in the choice between a small scale launch versus a full scale launch of a product within the marketplace or analogously within a company. Which type of launch works best given the specific circumstances of the market is an interesting question which often arises when product are being launched in end-consumer markets.

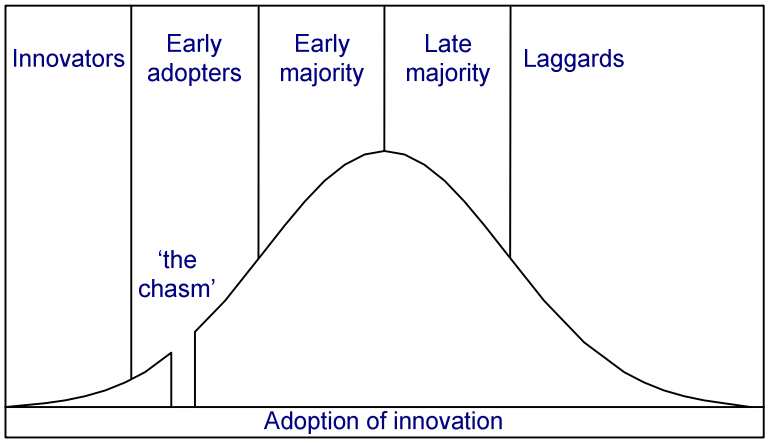

Figure 2: adoption lifecycle; adopted from Rogers (2003)

The model of Rogers (2003) as displayed in Figure 2 makes a distinction between different kinds of attitudes towards an innovation. The first group is composed of the innovators, which are people with a positive attitude towards trying new technology and products and are willing to take the risk that the innovation will not meet their expectations. They actively seek for new ways to satisfy their needs and are on the forefront of new developments. Early adopters display these behaviors as well, but are slightly more risk averse and depend on the experiences of the innovator group regarding information if the innovation will satisfy their expectations. Here the concept of the chasm is introduced by Rogers. The concept of the chasm relates to the spillover effect of an innovation. Only if there are enough innovators that have a positive attitude toward the innovation, a spill over to the early adopters will occur. If this is not the case, the innovation will die off slowly in the early stages of its life cycle. The next two stages of the innovation life cycle are composed of the majority, with a distinction between the early and late majority. To reach these stages, the innovation needs to be proven, as these two groups are risk averse in the sense that the innovation should have proven its value to both innovators and early adopters. The last group is comprised of the laggards. This group is often involved with the innovation because of some external factor. They are not actively involved with the innovation, and are sometimes forced by external factors to use the innovation. Important notion regarding the movement of the innovation through its lifecycle is that the groups in the model depend on one another regarding the information they get about the earlier mentioned qualities of an innovation. The most obvious example regards Observable results. Early adopters rely on information generated by the innovator group only if the innovation displays Observable results. This effect is present throughout the whole life cycle, and the same logic applies to the other qualities like Triability, Relative advantage, etc.

Another widely adopted view on the adoption of new technology is the Technology Acceptance Model (TAM), first introduced by Davis (1989). The model is often used to in explaining the adoption of IT based systems, and several extensions have been developed to make it more generally applicable (Schepers & Wetzels, 2007). TAM assumes that two important factors play an important role in explaining the intention to use technology, namely perceived usefulness and perceived ease of use. Looking at these constructs one may find similarities with the "qualities" as identified by Rogers (2003), more specifically the qualities "Relative advantage" and "Simplicity". Schepers and Wetzels (2007) performed a meta-analysis regarding the current research base in regard of TAM and the incorporation of the concept of subjective norm in the model. Subjective norm can be thought of

as being the perception of an individual that people important to him think he should perform a certain behavior. The meta-analysis performed by Schepers and Wetzels (2007) indicated that Subjective norm adds additional explanatory value to TAM. More specifically, large effect sizes where found between Subjective norm and behavioral intention (to use) and perceived usefulness. This implies that the opinions of peers regarding the innovation have an impact on how one values the innovation in terms of usefulness and on the intention to use the innovation. People rely on one another in forming an opinion regarding the innovation. They do this by using the information available in the network, thereby placing importance on the way the social network of an individual values the innovation and transfers this information to the person deciding whether to use or not use the innovation.

Subjective norm displays similarities to the notion of Rogers (2003) regarding the importance of the peer to peer evaluations. Both constructs stress the importance of the social network in the adoption process of new ideas or technologies. However, both models take the viewpoint of an individual being persuaded by its peers to try a new technology or idea. Implicit assumption here is that there is a certain body of peers enthusiastic about the new technology or idea to persuade other individuals to try out the new technology or idea. But the way this body of peer's forms itself is a question that is not answered by the examined literature.

2.1.1 Social capital and diffusion

Social capital is different from human capital. In short, social capital is a quality created *between* multiple individuals, while human capital is a quality created by the individuals *themselves*. These two forms of capital complement each other: human capital without social capital is useless as there are limited possibilities to benefit from opportunities. (Burt, 1997, 2000). Social capital displays network like behaviors (Burt, 1997, 2000). In order to explain this behavior, the concept of structural holes is introduced. In essence the structural hole argument "defines social capital of being the broker in relations between people otherwise disconnected in social structure". The structural hole consists of an opportunity to fill in this gap and thereby acting as a broker for the flow of information between people. We have observed earlier in this literature review that the flow of information plays an important role in order for an innovation to move through the adoption stages. While structural hole theory could imply that gaps in the network lead to the possibility to acquire new information sources and thus learn about the new innovation, the position of the broker in this concept forms a possible barrier. The broker decides if an actor in the network can obtain information from another actor. Because the actors themselves are not directly connected, this could lead to a reduced flow of information as the broker decides whether he wants to share information regarding the innovation.

According to (Burt, 1997) information consists of three components: (1) access, (2) timing and (3) referrals. The structure of the network is also an indicator for the redundancy of its information benefits. A large overlap in the network of an individual versus another individual also indicates a large redundancy in its information benefits. Vice versa, little overlap in the network implies little redundancy but instead create an additive effect for information benefits. Burt (1997) also found that social capital is mostly important for managers having few peers, as the value of social capital decreases with an increasing number of peers who perform the same tasks. He found that organizations tend to shift towards a network like organization structure with the associated shifts in coordination mechanisms as well. While traditionally formal coordination was useful in the bureaucratic organization, a shift towards network forms of organizations places more emphasis on

social capital as to cope with the increase in uncertainty, stress and disruptive conflict associated with network like structures. He also found that the formal structure of an organization is a poor indicator of the network organization, which is more accurately reflected by the extent to which organizational success is dependent on social capital of the managers.

Gabbay and Zuckerman (1998) provide a different view on the structural hole theory as proposed by Burt (1997, 2000). They draw on work by Coleman, who argues that, in fact, actors benefit from ‘‘social closure or the elimination of such gaps.” Actors may benefits from the close ties, which in turn increases trustworthiness of information and the ability for other actors to represent one’s interests. At first glance this seems to contradict the notion that actors may benefit from structural holes (or “gaps”) in the network as stated by Burt (1997, 2000). To provide a suitable explanation to this seeming contradiction, Gabbay and Zuckerman (1998) propose a different view using the “structuralist” approach to mobility. This encompasses taking a broader view on mobility than just the individual level, looking at the organizational level as well. This is an important influence in shaping the mobility processes underlying social networks.

Applying their theory to explain differences in mobility (i.e. promotion, turn-over intention), they found that access to structural holes is likely to be beneficial when the network structure is dense and work is organized on an individual rather than a collective basis. For work organized on a collective basis, they found that the structural autonomy associated may diminish ones social capital. This seems to be counterintuitive, whilst one may expect that working on a collective basis opens opportunities to expand one’s social capital. The explanation offered by Gabbay and Zuckerman (1998) is that in the collective setting they studied (the research design deemed collective organized work as work where individuals separately plan their work and at the end it is brought together) it was less necessary to expand one’s social network in order to gain an increase in mobility. The findings of (Gabbay & Zuckerman, 1998) help in gaining more insight in the role of the organizational context in social networking. For instance, the notion that access to structural holes is beneficial when the network structure is large and dense, thus providing a higher contact density (Gabbay & Zuckerman, 1998). They argue that high contact density can be advantageous in certain situations, but a disadvantage in others.

2.1.2 Trust

Several authors recognized trust as an important factor in the information transfer process in networks (Nooteboom (2001); Ming (2009)). The role of trust in the network information transfer process corresponds to sharing knowledge, involving psychological or emotional comfort due to social support and resource exchange between network partners (Ming, 2009).
Trust can be formed by either two ways. The first is formed by performing ethical behavior based on current societal norms and beliefs, and the second is by performing according to routine-like behaviors relating to specific situations for which the conformity is taken for granted. Nooteboom (2001) distinguishes three types of trust: (1) trust in competence, (2) trust in intentions and (3) confidence in external conditions. Trust in intentions is deemed the most complicated by Nooteboom (2001). It encompasses that one trusts the other party for performing to the best of their ability without harming one’s interest. It is possible to build up trust in organizations through individuals. In order to do this, encompasses making an assessment of positions in intra-organizational networks: to what extent do these individuals command resources, are they taken seriously and are they

supported by other like management or collaborators? Nooteboom (2001) notes that “if trust is only extended to people only ‘qua persona’, without being connected to their organizational roles, it can be deceptive”. The concept of trust in the flow of information in the network is interesting, as it links to the concept of subjective norm in the theoretical frameworks for the adoption of innovations. However, the notion of Nooteboom (2001) involving the deceptiveness of trust being extended qua persona is less relevant in this case, as the adoption process for Beweegze is not bound by organizational roles but more by personal connection to one another. Indeed, one may expect that “qua persona” trust indeed plays a role in the adoption process of Beweegze.

2.1.3 Proactivity

There has been substantial research regarding the proposition that proactivity may increase the activity in the social network (Thomas, Whitman, & Viswesvaran, 2010). Proactivity encompasses that people that perform these behaviors shape their social environment to increase their own success rate. It may also encompass that one fits an example role based on reputation, thus inspiring other people to perform accordingly. One may find that proactive people have a specific skill set that enables them to increase the opportunities to expand and improve their networks. As stated by Thomas et al. (2010), “Social networks of co-workers may serve as key sources for information and feedback that ultimately bolster employees’ confidence in their ability to be proactive” This in turn may empower other employees by providing a sense of belongingness and organizational support. This enables employees to challenge the status quo and voice change initiatives more liberally. These findings are backed up by Greve and Salaff (2001). They state that connections in the network can be either active or passive in nature. Passive contacts are those that are not currently used, but can be mobilized when needed.

2.1.4 Integration and research gap

In the previous section, two distinct streams of literature were examined to assess the role of social network in innovations. The first stream is related to the adoption of innovations in general and resulted in the identification of factors which influence the decision to adopt an innovation. Among these important factors is the information gained by or opinions from others regarding new products and technology (Rogers (2003), Schepers and Wetzels (2007)). Thus, the social interactions which one has with its peers, indeed plays a role in the adoption of an innovation. Looking back on the work of Rogers, this group of peers in the first stages in the lifecycle will be composed of innovators or first movers. But the way the social network forms itself throughout the population and over time is still unknown. In order to gain more insight in the way the social interactions and thus network plays a role in the adoption of innovations, a second stream of literature was reviewed. This stream of research was more geared toward the specifics of social networks and which important components form an effective social network. From this stream of literature it was found that the position of individuals in the network play an important role in the knowledge transfer process, where knowledge consists of three components, access, timing, and referrals. High interconnectivity in networks is an implication of information redundancy and thus limits the discovery of new information like innovations. On the other hand, a high interconnectivity in the network could increase trust in the innovation because of the possibility to cross-reference information obtained from the network regarding the qualities of the innovation.

This is a useful insight in the context of Beweegze as this implies that organizational settings partially shape the social networks and in turn the flow of information through the social network from one hot-spot to another. One may expect that success of Beweegze is dependent on the positioning of the initial trial group relative to the adopters in creating awareness. One may also expect that the formal coordination mechanisms for the introductions of innovations (like advertising, active promotion) lack the ability to persuade people for further trial. This implies that for the initial trial group, one must look beyond the formal structure of the organization and select individuals based on their relative position (structural hole spanning position) in the network. This is especially the case in larger organizations, where formal boundaries and a lower contact density both form barriers for an effective information flow. This problem is less present in smaller groups and organizations as in these organizations contact density will be higher. The notion about the role of the social network in the flow of information raises the question which factors influence this information transfer process.

Two important moderators have been found in literature that influence the intensity and quality of the knowledge transfer process. These factors consist of trust and proactivity. Trust is an important factor in the process of assigning value to the collected information, and thus plays an important role in assessing the quality of the shared information. Information gathered from a trustworthy source may be expected to be in the best of interest of the decision maker. Proactivity plays a role in the intensity of the knowledge transfer process. If individuals display more proactive behaviors towards one another, more information is shared. This mechanism could work both ways, one can seek information proactively or one may share information proactively.

Looking at these findings it is clear that social networks play an important role in the knowledge transfer process regarding new technology. What is unclear from the researched literature is what works best in each of the adoption stages as identified by Rogers (2003). It may be expected that the concept of structural holes may be advantageous in the early stages of introduction as this stage is mainly geared towards creating awareness. For this, it is important that the information broker in the network is willing to share information regarding the innovation and thereby tying different actors together that are otherwise not directly connected. As the innovation moves forward in the lifecycle, it may be expected that the benefits of structural holes automatically diminishes because of a larger proportion of the population being aware of the innovation. In these phases of the lifecycle of the innovation, more emphasis is placed on redundancy of information sources. This is also logical in the sense that a larger proportion of the population is involved in some way with the innovation so that a single actor can rely more on different information sources in shaping his opinion towards the innovation, and has to spend less effort to obtain the necessary information to form an opinion about the innovation, thus diminishing the role of proactivity. The opposite is true for trust. This becomes more important in the later stages of the lifecycle, as people in these phases tend to be more risk averse. Redundancy of information sources enables an individual to source its information from multiple sources adding an opportunity to cross reference information and thereby adding more value to the trustworthiness of this information. Figure 3 below displays this expected relationship.

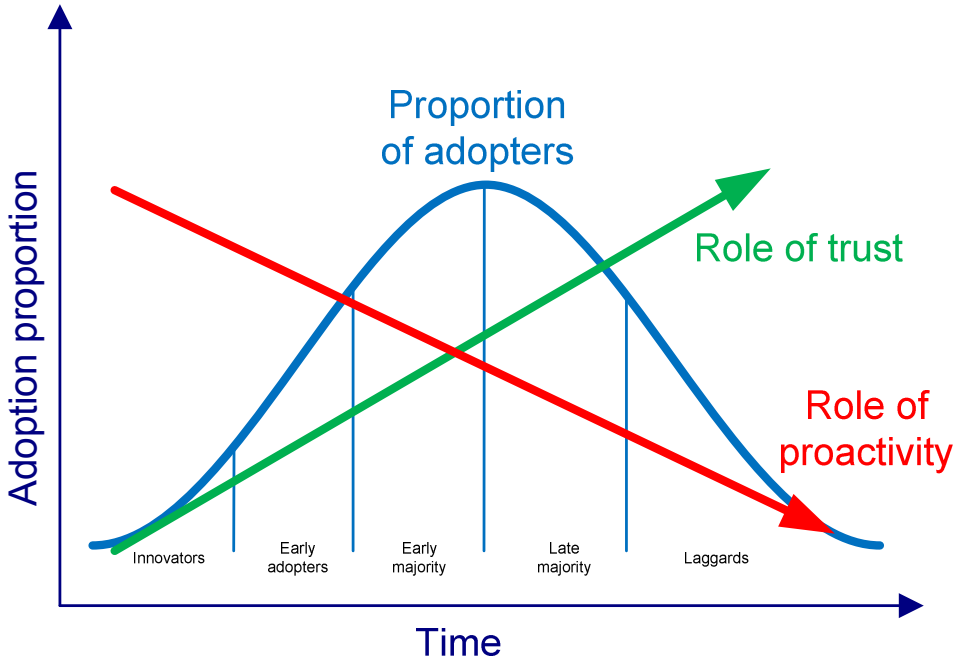

Figure 3: the expected role of trust and proactivity in the adoption of innovations

In the case of Beweegze, these post trial behaviors are related to retaining people in the platform for a prolonged time in the platform in order to accomplish both social and business goals of Beweegze. From the body of literature it may be expected that trial intentions regarding an innovation after a referral from a trustworthy actor in the social network may increase. It may be expected that if one can cross reference information regarding the qualities of the innovation, a better assessment of the real performance of the innovation on the qualities can be made which in turn aids in the decision whether or not to try the innovation. However, if this also has an effect on the retention or prolonged satisfaction and usage is a question that remains unanswered by current research.

2.1.5 Contribution

The research proposed in this thesis strives to fill in the previously identified gap in the current body of research, regarding the impact of the social network on the adoption and usage of an innovation in the long run. This research does this by taking the social aspect of the introduction phase of an innovation into account. The social aspect of the introduction strategy may impact the way information is gained about the "qualities" of an innovation as identified by Rogers (2003), during the early stages of the adoption process. The mechanism involved is the way information is gained about the qualities of an innovation: if multiple, trusted, sources of information can vouch for the "qualities" of an innovation, one is more easily persuaded to try the innovation and it is expected that the individual will value the qualities of the innovation more highly in the long run. This in turn will affect the retention rate of the innovation. What is unclear from current research is if the information gathering process in the social network indeed has an effect on the longer run retention rate. Current research does hint in that direction by for example including subjective norm in the information gathering process, but the effect of the introduction strategy is not yet explored in the current literature. By taking the effect of the introduction strategy on the information gathering process into account, this research will explore the concept of subjective norm from the TAM-model

(Schepers & Wetzels, 2007) in an in-depth way, thus contributing to the understanding of the concept of subjective norm in relation to the adoption of an innovation.

2.2 Information gathering process

Before an individual decides to try an innovation, he goes through an information gathering process. In this process information about the innovation is gained through various channels. One of these channels is formed by peers (Rogers, 2003). Peers are people who have formed an opinion about the innovation either by trying it themselves or by their own information gathering process. By consulting peers, an opinion can be formed regarding the qualities the innovation exhibits, and this opinion can be verified after use. What happens next is that the individual who tried the innovation becomes part of the group of peers from which other people gather their information.

In this respect, the collective information gathering processes can be viewed as a social network, forming specifically around the qualities of the innovation. Knowledge dissemination is a process that often involves the interactions taking place in social networks (Burt, 1997, 2000). In the case of an innovation, this knowledge dissemination regards the qualities that an innovation exhibits (Rogers, 2003). People will talk about how easy to use an innovation is, compared to others, or how beneficial it was to them in their daily lives (Burt, 1997).

As stated earlier, peers only form one channel from which an individual gathers information, these can be classified as “personal resources” using the topology of Belch and Belch (2007). Other sources are formed by promotional activities, or using the same topology “public resources”. How these sources relate to one another regarding the importance in the information gathering process is unclear. However several models regarding the adoption of innovations have found that peers indeed play an important role in the adoption process. Unfortunately the exact nature of this role hasn’t been addressed yet. Where previous research mainly focused on the initial trial of the product, the post-trial behaviors have been unstudied. Is the social network also involved in post-trial behaviors, and if so by what mechanism are questions not yet answered by research.

From the viewpoint of Beweegze this is an important question as the main focus of its business model is formed by prolonged use after the initial trial. What we have seen is that the social network plays a role in various stages in the product lifecycle. For this research we focus on the effect of the launch strategy on the retention of participants. The launch strategy within a company forms one the possibilities for Beweegze to influence the adoption process of Beweegze within a company. Retention in this context is defined as the intention to continue the usage of the product after an initial trial.

There are basically two options available when launching the product. The first option is formed by the traditional method of production launch, consisting of a large promotional campaign targeted at the intended audience. What is hoped for in this strategy, is that the innovation is picked up by innovators who in turn send information regarding the qualities of the innovation through the network. This information, accompanied by information from other sources is used by subsequent potential participants in their decision process regarding trial.

The second option available is giving a few individuals a direct way to start using the product, a selective introduction approach. The use of the product by these individuals and the information they send out regarding their use of the product in turn creates awareness for other potential

participants. The initial group becomes part of the information gathering process of subsequent participants. The main difference between these strategies is the initial information gathering. Based on the earlier findings in the literature review, it is expected is that by using a selective introduction approach an innovation is scored higher on its qualities. This is caused by the potential user placing a higher value on the information gathered by peers than on the promotional activities in forming an opinion regarding the product, thus leading to a higher assessment of the innovation qualities.

If the initial assessment of the innovation on the qualities also has an effect on the retention of participant resulting in prolonged use of the product, is however unclear. One may expect that if an innovation performs well on the innovation qualities, there is a greater chance that the innovation will be used over a longer period of time. However, as discussed earlier, previous research did not address post trial use behaviors of an innovation. This research aims to fill in this gap. The exact focus is to determine if the introduction strategy has an effect on the retention of participants.

This leads to a two-stage model in which the launch strategy influences the assessment of innovation qualities, by taking into account from which source information regarding the innovation is gathered during the information gathering process. The second stage of the model hypothesizes that a higher score on innovation qualities leads to a higher retention rate of participants. The model is depicted below in Figure 4. By using this two-step model, it is possible to link retention of participants to the initial launch strategy by taking into account the assessment of innovation qualities. These insights can subsequently be used for shaping a suitable launch strategy in regard to the long term goals e.g. quick market penetration or long run use.

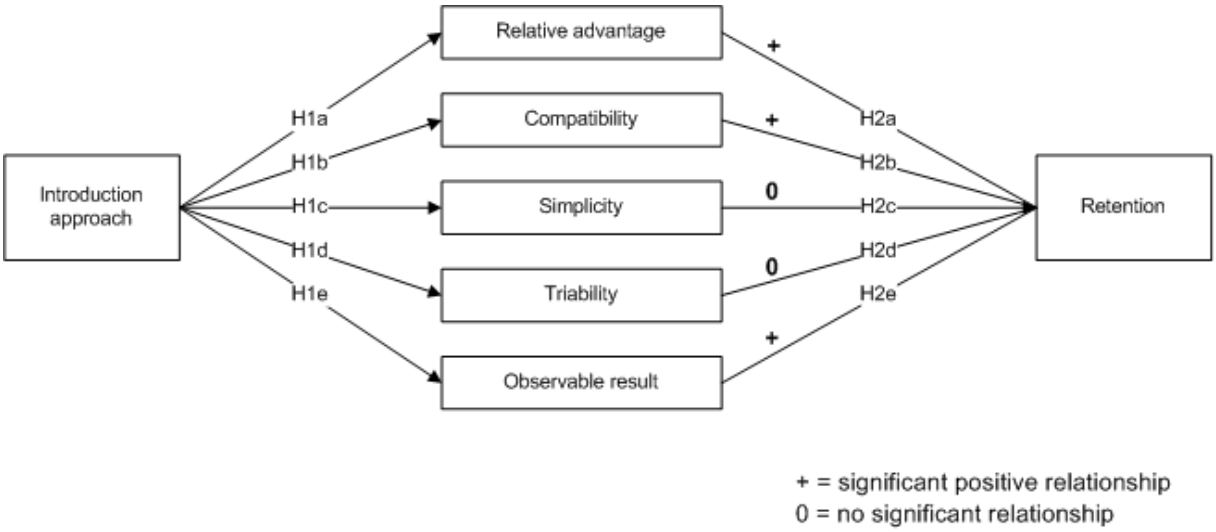

Figure 4: research model

2.3 The effect of launch strategy on innovation qualities

The use of the two stage approach means that there are two main hypotheses that underpin the model. The first hypothesis is that the launch strategy influences the assessment of innovation qualities. This leads to the following research question:

Research question 1: Does the introduction strategy have an influence on the assessment of innovation qualities?

In order to answer this research question five hypotheses are formulated examining the effect of the introduction strategy on the described innovation qualities. Building on the work in section 2.1.4, it is expected that for each of these qualities the selective introduction strategy will lead to a higher evaluation of these qualities due to the trustworthiness of the information gathered from the social network in comparison to information gathered through traditional channels.

Hypothesis 1a: the selective introduction strategy leads to a higher assessment of Relative advantage compared to the large scale promotion introduction approach.

Hypothesis 1b: the selective introduction strategy leads to a higher assessment of Compatibility compared to the large scale promotion introduction approach.

Hypothesis 1c: the selective introduction strategy leads to a higher assessment of Simplicity compared to the large scale promotion introduction approach.

Hypothesis 1d: the selective introduction strategy leads to a higher assessment of Triability compared to the large scale promotion introduction approach.

Hypothesis 1e: the selective introduction strategy leads to a higher assessment of Observable results compared to the large scale promotion introduction approach.

2.4 The effect of innovation quality on retention

The second stage of the model relates to the effect of innovation qualities on retention of participants. It is expected that a higher assessment of innovation qualities is related to a more beneficial assessment of the overall quality of the product and thus is related to prolonged use. This leads to the following research question:

Research question 2: Does a higher assessment of innovation qualities by the user lead to a longer usage period of the innovation.

In the case of Beweegze, this would encompass that a higher assessment of innovation qualities would contribute to retention of participants in the platform thus adhering to social and organizational goals of Beweegze, namely keeping users more active in their daily lives and spending their point in the online shop.

In this study, we will look at the innovation qualities and their contribution to retention separately. Reason for this is that by taking this approach more insight is gained in which of the innovation qualities have an effect on retention and thus either conforming or rejecting the intuitive reasoning. Intuitively this could also be expected when looking at the definition of the separate innovation qualities. For example, the quality “Triability” will, for example have a greater impact on first time use than on the decision to keep using the product in the longer run. In comparison, the quality “Observable result” may be expected to show effects on both initial trial and on retention. Second argument for choosing this approach is that this makes it possible to gain insights in the relationship between launch strategy on individual innovation quality and subsequent retention. This leads to the formulation of five different hypothesis that reflect the relationship between innovation quality and retention.

Relative advantage

Relative advantage compares the performance of the innovation compared to other products doing more or less the same (Rogers, 2003). If the perception of the user is that the innovation performs better than others in fulfilling the needs of the user, the user will be more inclined to keep using the product. Thus, a positive effect of Relative advantage on retention is expected.

Hypothesis 2a: Relative advantage has a significant positive effect on retention.

Compatibility

The quality "Compatibility" refers to how an innovation meets up to the values and norms of the user (Rogers, 2003). It may be expected that if an innovation scores highly on "Compatibility" the user thinks that his use of the innovation is more justified for its own perception and that of peers, and thus the user will be more inclined to prolong use. This is reflected in the following hypothesis:

Hypothesis 2b: Compatibility has a significant positive effect on retention.

Simplicity

Simplicity refers to how easy to use the product is (Rogers, 2003). While this quality plays an important role early in the lifecycle of the product, this effect will degrade over time due to the learning effect. Early in the lifecycle the user need to become familiar with the attributes of the innovation. An innovation that is easy to use will enable to user to learn the product more quickly and thus helps the user through the first stage of the lifecycle of the product. Later in the product lifecycle Simplicity of the innovation plays a smaller role because the user knows what to expect in terms of using the product.

Hypothesis 2c: Simplicity has no significant effect on retention.

Triability

The quality "Triability" refers to the extent the innovation can be tried out or experimented with (Rogers, 2003). This attribute plays an important role early in the lifecycle in order to persuade a user to try the product and to form an opinion regarding the other qualities. However, later in the lifecycle the same logic applies as for the quality "Simplicity". The user knows what to expect from the innovation and thus this quality plays little role in the retention of participants.

Hypothesis 2d: Triability has no significant effect on retention.

Observable result

Observable result refers to the extent a user experiences the benefits of the innovation (Rogers, 2003). If these benefits are easy to observe for the user, he will be more inclined to prolong use of the innovation, regardless the position in the lifecycle. This leads to the following hypothesis.

Hypothesis 2e: Observable result has a significant positive effect on retention.

3 Methodology

With the formulation of the hypotheses based on the theoretical model, the research methodology can now be developed. This chapter is build up as follows: First a general description of the research approach is given. In the next sections the measurement instrument and research subjects are developed and described. Finally, the data collection and analysis procedures are discussed.

3.1 General research approach

First, a methodological decision has to be made regarding the determination of the general analytic strategy, which in turn influences how both data collection and analysis are to be performed. Yin (2013) describes two general analytic approaches, being analysis based on theoretical propositions or analysis based on a descriptive framework. The former approach relies on pre-existing theory to guide data collection and analysis. Grounded theory is an example of the latter analytic approach. Within this approach theory results from a constant interplay between data collection and analysis. Data analysis is guided by theoretical sampling, meaning that data is collected which is expected to be relevant to the emerging theory (Goulding, 2002). This project mainly focuses on the approach of analysis based on a theoretical proposition, namely the effect of the introduction strategy on the perception of innovation qualities and the subsequent effect on retention rate of an innovation.

In order to answer the research questions regarding the effect of the introduction strategy on the perception of innovation qualities and the subsequent effect on retention rate of an innovation, an experimental approach using two 'treatments' in the form of different launch strategies is used. This will enable a comparison between the two introduction strategies that are based on the earlier formulated theoretical framework (Graziano & Raulin, 2009).

For this specific research one group will be exposed to the selective introduction strategy while the other group consisting of participants is exposed to the large scale promotion introduction strategy. The experimental design has the advantage that, because both groups assess the same innovation, an answer can be given regarding the effectiveness of the introduction strategy in retaining participants and regarding the assessment of innovation qualities which in turn answer the research questions formulated in the earlier sections (Graziano & Raulin, 2009). Next, a description of the two different treatments is given:

1) The large scale promotion introduction approach will consist of an invitation letter to all workers in that group giving a description of the Beweegze, and a voucher giving access to the program. During a time frame of approximately two months several addition promotional messages will be sent out, like e-mail reminders, intranet news messages etc.
2) The selective introduction approach will consist of identifying a few key individuals that will be used as promoters of the innovation. This selection will be done beforehand with an individual who can identify individuals based on a profile sketch containing elements of networking behaviors and innovative behaviors. Next, the identified individuals will be invited to participate in Beweegze. In this invitation, the procedure as to how other interested individuals can participate in the program will be highlighted. This will enable the innovation to diffuse through the experimental group.

3.2 Development of questionnaires

The questionnaire consists of three parts. The first part is concerned with general descriptive statistics of the respondent. These statistics are included in the questionnaire in order to determine

sample characteristics and thus aid in the assessment of sample adequacy. The second part of the questionnaire is concerned with measuring the innovation qualities. And finally, the third part is concerned with determining the intentions of participants to prolong use, and thus measuring the retention construct. Below, the parts that will make up the questionnaire are elaborated further.

3.2.1 General descriptive statistics

The first part of the questionnaire is formed by general descriptive statistics. The descriptive statistics are used to assess if both groups are more or less comparable in terms of respondent attributes. This will aid in the generalizability of the results following from the questionnaire. If for example the two experimental groups differ to a large extent in composition, this could confound the effects of the introduction strategy. For the purpose of assessing sample characteristics the most commonly used statistics like age, gender and level of education are used.

3.2.2 Innovation qualities

Flight, D'Souza, and Allaway (2011) developed an instrument to measure the innovation qualities from Rogers (2003). They reckon that over time a plethora of different characteristics that together describe an innovation have been developed and suggest to consolidate these first order characteristics to higher order constructs. The result of their work is an instrument specifically designed to measure innovation characteristics. Their instrument differs from the work of Rogers in one aspect: the Relative advantage quality as defined by Rogers (2003) was adopted in two separate measurement scales: Relative advantage (in this case only adhering to tangible advantages) and Social advantage (adhering to intangible advantages). These together form the quality as defined by Rogers, which incorporates both the tangible and intangible benefits of the innovation. This makes the work of Flight an improvement over the original work of Rogers by providing more insight in the underlying structure of the Relative advantage quality as defined by Rogers (2003).

As such, for this research, we adopt the measurement instrument as developed by Flight et al. (2011). In order to adopt the instrument, the items were translated in Dutch in order to develop a questionnaire in the native language of the sample population in order to heighten the response rate. In addition, the items are adapted in order to better fit the characteristics of the innovation (in this case Beweegze) under study. Some items were dropped because they were irrelevant in the context of this specific research. An example is a question like: ‘This product saves potential adopter’s time in use’.

The quality of the translations was assessed by comparing the original and translated items by two different appraisers who are familiar with the research subject. The result of this comparison was that for a few items problems existed with the translation, thus there was a high degree of agreement between the appraisers regarding the quality of the translations. For those items where there was a disagreement about the translation, an alternative translation was developed by discussion. The innovation quality constructs and their translated scale items are displayed in appendix I. Also note that the Simplicity construct was reversed to a complexity scale. A higher score on the complexity scale corresponds to a lower score on the Simplicity quality. In this research, the original scale of Flight et al. (2011) is utilized, so for the subsequent analyses the complexity scale is reversed to a form a Simplicity scale.

3.2.3 Retention

In order to determine the effect of the innovation qualities and the effect of the introduction strategy on retention, the intentions for future use need to be measured. In order to do so, questionnaire items that specifically address future use intentions were devised. In addition, the current usage period of Beweegze is also included in order to assess the relationships between usage period, the assessment of innovation qualities and the future use intentions. The resulting items are also displayed in appendix I.

3.2.4 Measurement scale

The work of Flight et al. (2011) uses different measurement scales depending on the type of analysis that is performed in the subsequent stages in the development of the instrument. For the Exploratory Factor Analysis utilized in the development stage a five-point Likert scale is used and for the Confirmatory Factor Analysis in the validation stage, a seven-point scale is used. Flight et al. (2011), do not give a clear direction as to use a five-point scale or seven-point scale. The seven point scale has the advantage that it gives subjects more opportunity to discriminate in their response, compared to the five point scale (Nunnally & Bernstein, 1994). This results in a larger variation in the data-set which, in turn, can help in determining effects of the experimental conditions (Nunnally & Bernstein, 1994).This research strives to determine if there is a large effect between the experimental conditions, thus proving the superiority for an approach compared to the other. Therefore, it is questionable how relevant the added resolution of utilizing a seven point scale over a five point scale is in relation in determining the effect size of the experimental condition in this specific research. Therefore, a higher resolution of the measurement instrument is less relevant because this is needed in the detection of small differences opposed to the large differences we are trying to detect. Following the work of Flight et al. (2011) in the instrument development stage and the discussion in Nunnally and Bernstein (1994) regarding the resolution, a five point Likert scale will be used. The five point scale gives sufficient resolution to determine a large effect size, and is easier to understand for respondents when compared to the seven point scale. In order to keep the questionnaire simple to fill in and thus heighten the response rate, the five point Likert scale was used for all items.

3.2.5 Pre-test of questionnaire

With the main elements of the questionnaire determined, the next step in the development of the questionnaire is formed by the pre-test. The goal of the pre-test is to identify potential problems regarding questionnaire items and to resolve these issues. Graziano and Raulin (2009) have identified several options to assess the items in the questionnaire: (1) have an expert read the survey, (2) have a few non-experts read the survey, (3) giving the survey to a small pilot-sample and (4) give it to small groups whose performance can be predicted.

In pretesting the questionnaire a combination of options one, two and three was used. The fourth option was not feasible in this specific research context, due to unavailability of small groups whose performance can be predicted. The advantage of using this combination is that next to incorporating expert views, potential field problems in filling out the questionnaire can be identified and resolved. Next the pretesting process is described.

The first step was to discuss the translated draft version of the questionnaire with a product expert from Beweegze, resulting in an assessment of the suitability of the questions from the instrument as

developed by Flight et al. (2011) in relationship to Beweegze. The result of this discussion was that a few items were dropped from the instrument as these were not applicable in the case of Beweegze (for example 'Beweegze heeft negatieve impact op gezondheid geassocieerd met het gebruik').

Next step was to organize a small pilot sample of non-experts. The adapted questionnaire was given to five different people who were asked to comment on the clarity and formulation of the questions. This step identified some issues regarding the clarity of the questions and some translational issues. These where resolved before going to the next step in the pretesting process (for example 'het is gewoon om Beweegze bij anderen te zien' or 'het is normaal om Beweegze bij anderen te zien').

The last step in the pretesting process was that the resulting questionnaire from step two was assessed by the thesis-mentor. Again this step identified some issues regarding the formulation and clarity of the questions which were resolved resulting in the final version of the questionnaire (for example: 'Beweegze is technisch gezien complex' was adapted to 'Beweegze is technisch gezien complex in gebruik'). The final questionnaire can be found in appendix I.

As can be seen, the questionnaire incorporates some items not related to the research subject but helpful for Beweegze in order to further develop the product. As these items are not related to the theoretical model the results regarding these items are not discussed, but the interested reader can find the results in appendix IV.

3.2.6 Validation of measurement scales

For the subsequent analyses regarding innovation qualities a summated scale will be used. The use of a summated scale has the advantage that it can reflect complex concepts in a single measure and reduce measurement error at the same time (Hair, Black, Babin, & Anderson, 2009). In order to establish a summated scale several steps needs to be taken, where the procedure developed by Hair et al. (2009) is used. The procedure consists of three steps which are discussed next.

Dimensionality

The first step is to determine unidimensionality. Visual inspection of the correlation matrix in appendix V yields a substantial number of correlations larger than .30, indicating appropriateness of factor analysis (Hair et al., 2009). A principal component analysis was performed using an orthogonal rotation of the factors using the VARIMAX technique, as commonly used in this type of research (Hair et al., 2009).

The number of factors to be extracted in the solution was determined by using an a-priori criterion as we strive to replicate the work of Flight et al. (2011) regarding scale development, in this specific context. Thus, the number of factors to be present in the data is known based on earlier work, and as such an a-priori criterion is applicable (Hair et al., 2009). The number of factors to be extracted based on this reasoning is six (the number of innovation qualities from the instrument of Flight et al. (2011)), as described in section 3.2.2.

Given the small sample size used in the factor analysis (n=40), which does not meet the requirement of 50 observations as stated by Hair et al. (2009), the interpretation of the factor loadings should be handled with care. Based on the guidelines of Hair et al. (2009), for a sample size of 50 respondents, the factor loadings should exceed .75. In appendix VI, the factor loadings which exceed this criterion are shown in grey. Based on not meeting the requirements of minimum sample size, the results of

the factor analysis are inconclusive regarding the underlying structure. Visual inspection of the rotated factor matrix does suggest that for some items high cross loadings between the factors exist, mainly for the Observable result and Compatibility factors indicating that there might be problems in the explanation of the underlying structure by the extracted factors. However, as this factor analysis was intended as a means of replicating the method of Flight et al. (2011) in the development of innovation qualities, there is a theoretical foundation that there should be an underlying structure for the items that reflect innovation qualities. As such, all the items in the questionnaire are retained at this stage for assessing the reliability and validity of the scales. In addition, the factors are named according to the item loadings as can be seen in appendix VI.

Reliability

The next step is to determine scale reliability. This was assessed by calculating Cronbach's α (Hair et al., 2009). Generally, an acceptable alpha level for scale reliability development is 0.70 or greater (Hair et al., 2009), which the data exceed, as can be seen in Table 1 and appendix VII.

Scale	Number of items in scale	Crohnbach's α
Observable result	4	0.7800
Triability	2	0.9126
Compatibility	5	0.8789
Social advantage	4	0.8908
Relative advantage	5	0.8221
Simplicity	4	0.9093

Table 1:scale reliability

As a result, the scales show a high degree of internal consistency, so there is evidence that the items could be retained in creating the summated scale. In the next step the validity of the constructs is assessed.

Internal Validity

The last step is to determine the validity of the summated scales. For the assessment of the validity of the constructs, both convergent and discriminant validity is assessed following the recommendations of Hair et al. (2009). by comparing the correlations of the different items to each other. The correlations between the items that comprise each of the constructs can be found in appendix V. Next, the convergent and discriminant validity for each of the constructs are discussed.

Observable result

Inspection of the correlation matrix in appendix V reveals that Observable result has poor convergent validity indicated by the relatively low correlations between the items. In addition, discriminant validity is also poor, indicated by relatively high correlations with the other items. This indicates that there are issues with this scale (Hair et al., 2009). However, due to the lack of an alternative instrument and the relatively low sample size in determining the underlying structure, the work of Flight et al. (2011) is followed in creating a summated scale. However, this warrants care in interpreting the results of the subsequent analysis.

Triability

Triability has both sufficient convergent and discriminant validity indicated by the high correlations between the items of the construct and low correlations between other items. This indicates that the Triability scale has good validity based on the recommendations of Hair et al. (2009). Thus, the summated scale seems to be valid in this context.

Compatibility

For Compatibility, observation of the correlation matrix yields that there is a fairly high degree of convergent validity indicated by high correlations between the items of the construct. However, discriminant validity could be a problem indicated by relatively high correlations with other items (Hair et al., 2009). Following the same reasoning as for Observable result, the work of Flight et al. (2011) is followed in creating a summated scale. Again, this warrants care in interpreting the results of the subsequent analysis for this scale.

Social advantage

Inspection of the correlation matrix in appendix V reveals that Social advantage has reasonable convergent validity indicated by relatively high correlations between the items. In addition, discriminant validity is also reasonable, indicated by relatively low correlations with the other items (Hair et al., 2009). This indicates that the items reasonably represent Social advantage. Based on the theoretical work of Flight et al. (2011), the items are retained in the scale. However, care is warranted in interpreting the results of the subsequent analyses, as the scale is only a reasonable representation of the construct in this context.

Relative advantage

Inspection of the correlation matrix in appendix V reveals that Relative advantage has poor convergent validity indicated by the relatively low correlations between the items. In addition, discriminant validity is also poor, indicated by relatively high correlations with the other items. This indicates that there are issues with this scale (Hair et al., 2009). However, due to the lack of an alternative instrument and the relatively low sample size in determining the underlying structure, the work of Flight et al. (2011) is followed in creating a summated scale. This warrants care in interpreting the results of the subsequent analyses for Relative advantage.

Simplicity

Simplicity has both sufficient convergent and discriminant validity indicated by the high correlations between the items of the construct and fairly low correlations between other items. This indicates that the Simplicity scale has reasonably good validity based on the recommendations of Hair et al. (2009). Thus, the summated scale seems to be valid in this context.

3.3 Data collection procedure

With the completion of the measurement instrument, we can now turn to the data collection procedure. This section will deal with determining the samples that represent the experimental groups and with the procedure to collect the data from the sample groups.

3.3.1 Sampling

In order to do statistical inference regarding the two experimental treatments, the groups need to be relatively comparable in size and general attributes (Graziano and Raulin (2009); Field (2013)). When conducting the experiment two groups are used with employees that have more or less the same characteristics in terms of demographics, culture, (company-) norms and values, so that as much factors as possible are the same for each of the groups. This ensures that there is homogeneity regarding the demographic attributes of the respondents, cancelling out noise regarding the hypothesis. By applying the questionnaire to two different groups, each of which have been given a different "treatment" in the form of a different launch strategy, differences can be detected between the groups in the assessment of innovation qualities.

In order to test the effects of both introduction strategies, different samples will be used. In one sample the large scale promotion introduction method will be used to launch the innovation, the other sample will be introduced to the product by means of a selective introduction strategy. The size of the experimental population is limited to the number of participants in each group that participate in the Beweegze program. The groups are both drawn from one organization: Rivas Zorggroep (Rivas). Rivas is a healthcare organization operating in the central region of the Netherlands. With almost 6000 employees divided over approximately 25 different locations, it is one of the larger healthcare providers in the Netherlands.

Group 1: Large scale promotion strategy

In the summer of 2014, Beweegze was launched within Rivas Zorggroep using a large scale promotion strategy. An advertisement was placed on the companies intranet news page and several introduction presentation sessions were organized. In the presentation sessions, a product expert demonstrated the product and there was a possibility for potential participants to ask questions. The large scale introduction strategy resulted in 62 participants entering the Beweegze program.

Group 2: Selective introduction strategy

Rivas Zorggroep has offered Beweegze as a gift towards project and management team members for completing a large project conducted over 2013 and the beginning of 2014. Project team members all received a direct invitation containing a voucher code to enter the program for free. As a result, 88 participants entered in the Beweegze program.

3.3.2 External validity

External validity refers to the extent in which the findings are generalizable to the population (Graziano & Raulin, 2009). In order to achieve external validity, the research subjects should be randomly sampled from the population (Graziano & Raulin, 2009). In this study, the samples are drawn from one organization. This limits the generalizability of the findings to other organizational contexts, however it also opens a venue for further research.

Regarding the sampling within the organization for the experimental groups, the questionnaires were distributed over two distinct databases of participants that could be assigned to either one of the groups. The subsequent response was not under the influence of the researcher other than sending out reminders. This could also pose issues regarding random sampling as people who are actively using Beweegze could be more inclined to fill out the questionnaire compared to people who do not

actively use Beweegze anymore. This also limits the generalizability of the results of the subsequent analyses.

As a last point, there is a risk involved in that the experimental groups "cross-contaminate" if they have high contact density between each other, thus influencing the effects on the outcomes of one intervention on the other. While the experiment was conducted within one organization, the size of the organization and its geographical dispersion reduces the contact density between participants sufficiently to conclude that cross-contamination between the experimental groups will not be an issue for this experiment. However, this also imposes limitations to the generalizability of the findings of the experiment on different organizational contexts.

3.3.3 Manipulation check

Sawyer, Lynch, and Brinberg (1995) found that a manipulation check will have little to no value if the relationship between the operational and latent independent variable is known. In this research there is no direct manipulation to convert the latent independent to the operational independent variable. There is a clear distinction between participants in the large scale promotion group and the participants that were targeted by the selective introduction strategy. Because of the lack of manipulation of the independent variable no questions were added to the questionnaire that would allow for a manipulation check.

However an argument can be made for the need for a manipulation check if we examine the group targeted by the selective introduction approach. Management and project team members of a large project all received a direct invitation to join Beweegze. One could argue that this is the operational independent variable which is translated from the notion of the selective introduction strategy, in this case the latent independent variable. While it is obvious that the adaption of the innovation in this approach is indeed based on information gathered by peers and the perceived trustworthiness of this information, it is not certain that the individuals targeted by this approach have a structural hole spanning position. Since no questions where added to the questionnaire that would allow measurement of the notion of a structural hole spanning position this cannot be proven and therefore this is a limitation of this research.

3.3.4 Data collection procedure and timing

Next, we turn to the procedure and timing of the data collection. Since this research strives to make a connection between the assessment of the qualities of the product and future use intentions *after* the initial launch, it is necessary to take a certain amount of time into account for the participant to form an opinion regarding the product. The exact timing of the measurement is a matter of finding a balance between the ability of a person to form an opinion regarding the qualities of the product at one hand and the ability to make a statement regarding retention of the product in the long run on the other hand. For example, a person will be able to make statements regarding the (perceived) qualities of the product even before initial trial but these statements will be of relatively little value in predicting retention in the long run. From a practical point view, a period of approximately 36 months after initial introduction (the date at which the first participant entered the program) was chosen.

The data collection itself uses the following procedure as displayed in Figure 5:

Figure 5: data collection procedure

The questionnaires are spread in an electronic form using the survey tool 'Thesistools'. This tool supports the data collection procedure by the ability to send reminder-emails to the participants in the sample. When the questionnaire is completed by the participant, the scores on the separate questions are stored in a database which in turn can be used as the data-set to perform the analysis. After the response period is closed, the data-set is retrieved and processed in order to perform the analyses.

3.4 Data analysis procedure

Following the same reasoning for the collection of data, the data analysis also consists of two different methods. For the first set of hypothesis, a comparison is made between the two groups utilizing different launch strategies and the subsequent effect on innovation quality assessment. This in turn implies the collection of two different samples to make the comparison. Regarding the second stage of the theoretical model and the accompanying set of hypothesis, it is expected that the same relationships between innovation quality assessment and retention are present across both experimental groups. In other words, if the innovation is scored higher on the innovation qualities, the participant will more likely be inclined to prolong use regardless of the experimental group in which the participant is placed. This gives a theoretical justification to pool both samples into one analysis for the second stage of the model. Next, for both stages of the theoretical model the translation of item scores to variables is described together with the data analysis procedure.

3.4.1 Influence of introduction strategy on innovation quality assessment

Translation of item score to variable

In order to perform the analysis regarding the effect of the introduction strategy on innovation quality assessment the response on the individual items need to be translated into a scale score for each of the qualities. From there the subsequent analysis can be performed on the scale scores in order to determine if there is a significant difference between the groups.

There are mainly two different approaches for this step. The first option is to use the summated score over the individual items to represent the scale score. The other approach is formed by the use of the mean item score to represent the scale score. Both approaches are perfectly correlated, but the main difference between the two approaches is that by using the mean score the results of the analysis are more easily interpreted as the scale scores are consistent with the measurement scale used in measuring the items (Field, 2013). Based on this logic, this research employs the mean score of the individual items. This way, the original work of Flight et al. (2011) is followed.

Data analysis procedure

The influence of the introduction strategy on innovation quality assessment follows from the experimental design in which there is a control group and an experimental group. The control group is formed by the group where the large scale promotion introduction strategy is used, and the

experimental group is exposed to the selective introduction approach. Based on this design, the t-test is most appropriate (Field, 2013). As such, the analysis will be done by performing a t-test with the two experimental groups in order to determine if there is a significant difference between the two introduction strategies for the retention rate. The results of the analysis in turn can be used either confirm or reject the hypothesis that the introduction strategy has an influence on the retention rate for the innovation. In case the normality assumption underlying the t-test is violated, Field (2013) suggests using the Mann-Whitney U test.

Note that there is a specific prediction being made regarding the direction of the difference. This follows the development of the hypothesis in section 2.3, where it was stated that quality assessment in the control (large scale introduction) group is lower compared to the experimental (small scale) group. This has the implication that for testing the hypothesis, a one tailed test is more appropriate since a specific direction of the relationship is made (Field, 2013). In the hypothesis testing a confidence level of 95% is used, common in this type of research (Field, 2013). For the subsequent analyses, a response of approximately 30 participants in each group is necessary in order to have a large enough sample size to do statistical inference regarding the hypotheses and to detect at least a large effect size (Field, 2013).

3.4.2 Influence of introduction strategy on innovation quality assessment

Translation to variables
In order to measure the relation between innovation quality assessment and retention, we use the scale scores developed for measuring the effect of introduction strategy on innovation quality assessment as the independent variables.

As dependent variables, the two questionnaire items relating to retention are used. These two items are (1) Future length of use, and (2) Usage in one year. These items do not represent a scale in the sense that the questionnaire items each have a different scope and measurement level. Therefore, for the subsequent analyses the individual items will be tested independently. Using this approach the problems regarding scale reliability and validity introduced when using an averaged or summated score of the individual items are mitigated. In addition, by using the individual items as dependent variables in the subsequent analyses provide additional insights as in which direction an innovation quality assessment will influence retention. For instance, does the innovation quality assessment mainly influence current or future use intentions, or mainly the attitude towards the innovation. By combining the results of the separate analyses, conclusions may be drawn on the effect of innovation quality assessment regarding the construct of retention.

Data analysis procedure
Based on the earlier work regarding the second stage of the theoretical model, the innovation qualities are regarded as predictors of retention. For example, if an innovation quality is scored highly it is expected that there will be a larger intention to prolong use as compared to the situation were the innovation quality is scored lower. Based on this design, Field (2013) suggests using a linear regression model, where the β's represent the regression coefficients or the contribution of each of the qualities on the dependent variable 'retention'

For the actual analysis the second set of hypotheses (hypotheses 2a – 2e) are translated into a linear regression model using each of the innovation quality scores as coefficients in the model. The resulting model can be described with the following equation:

$$\hat{Y}_{retention} = \beta_{constant} + \beta_{relative\ advantage}x_i + \beta_{social\ advantage}x_i + \beta_{simplicity}x_i + \beta_{compatibility}x_i + \beta_{observable\ result}x_i$$

Next step in the analysis is to determine if the regression coefficients in the model are statistically significant predictors of retention. A confidence level of 95% was chosen, common in this type of research (Field, 2013).

4 Results

After the completion of the measurement instrument and data collection procedure, we can now turn to the data analysis procedures. Since the research model encompasses a two stage approach for determination of the effect of the introduction strategy on innovation quality assessment and subsequent retention of users, the data analysis procedure also consists of two parts. The results of the analysis are discussed accordingly. The resulting output for the statistical models can be found in appendix II and appendix III.

4.1 General descriptive statistics and characteristics

In this section the general characteristics of both experimental groups are described. Based on these characteristics it is possible to determine if the two samples are relatively equal compared to one another, an important underlying assumption for the model as discussed in section 3.3.1. If both samples are relatively equal in terms of demographics and other characteristics, the findings on the subsequent analyses in the hypothesis testing process regarding the effect of introduction strategy on innovation quality assessment are more likely to represent a genuine effect of the experiment.

The questionnaire incorporated five descriptive variables: (1) gender, (2) age, (3) education, (4) minutes spent on moving and exercising per week and (5) movement profile. The statistics are displayed for each of the variables individually.

4.1.1 Gender, Age and Education

The descriptive statistics for Gender, Age and Education are displayed in Table 2.

(N=58)	Overall	Large scale introduction	Selective introduction
Gender N (%)			
Male	27 (46.6)	12 (41.4)	15 (51.7)
Female	31 (53.4)	17 (58.6)	14 (48.3)
Age N (%)			
Jonger dan 18	0 (0)	0 (0)	0 (0)
18 tot 24 jaar	4 (6.9)	2 (6.7)	2 (6.7)
25 tot 34 jaar	9 (15.5)	5 (17.2)	4 (13.8)
35 tot 44 jaar	10 (17.2)	2 (6.9)	8 (27.6)
45 tot 54 jaar	14 (24.1)	7 (24.1)	7 (24.1)
55 tot 64 jaar	15 (25.9)	8 (27.6)	7 (24.1)
65 jaar of ouder	6 (10.3)	5 (17.2)	1 (3.4)
Education N (%)			
Geen opleiding voltooid	0 (0)	0 (0)	0 (0)
Lagere school/basisonderwijs	0 (0)	0 (0)	0 (0)
LBO, VBO, LTS, LHNO, VMBO	3 (5.2)	2 (6.9)	1 (3.4)
MAVO, VMBO-t, MBO-kort	3 (5.2)	2 (6.9)	1 (3.4)
MBO, MTS, MEAO	17 (29.3)	13 (44.9)	4 (13.8)
HAVO, VWO, Gymnasium	6 (10.3)	2 (6.9)	4 (13.8)
HBO, HEAO, PABO, HTS	15 (25.9)	9 (31.0)	6 (20.7)
Universiteit	13 (22.4)	1 (3.4)	12 (41.4)
Anders, namelijk	1 (1.7)	0 (0)	1 (3.4)

Table 2: descriptive statistics for Gender, Age and Education

The table shows that both samples are more or less equal in terms of composition for gender and age. For age there is a small bias for the large scale introduction group towards the older groups in comparison to the selective introduction group. For education, the groups are more diverse regarding education type. Generally, the samples are quite comparable as both samples tend to favor the higher educational levels.

4.1.2 Minutes spent on moving and exercising and Movement profile

The individual item responses for Minutes spent on moving and exercising are added up to obtain the Minutes spent on moving and exercising scale score. The results for both groups are displayed in Table 3 below. For the movement profile a compounded scale was constructed from the responses on each of the individual items in the scale. The range of each of the items was recoded such that negative values on the scale represents a more negative approach to exercising and movement, while a positive value reflects a positive attitude to exercising and movement. The scale ranges for -2 (highly negative) to 2 (highly positive). The composition of both groups is displayed below in Table 3 as well.

Variable	N	Range	Mean ± SD
Minutes spent on moving and exercising			
Overall	56	45 – 2775	534.8 ± 456.2
Large scale introduction	27	60 – 1680	502.1 ± 372.9
Selective introduction	29	45 – 2775	565.3 ± 527.0
Movement			
Overall	58	-2 – 2	0.325 ± 1.039
Large scale introduction	29	-2 – 2	-0.011 ± 0.944
Selective introduction	29	-2 – 2	0.661 ± 1.036

Table 3: descriptive statistics for Minutes spent on moving and Movement profile.

Looking at the table, it becomes apparent that on both the Minutes spent on moving and exercising and Movement scale differences exist between the two samples. The selective introduction group has generally a more favorable attitude towards moving as displayed by both a higher average score on Minutes spent on moving and exercising and Movement. An explanation for this could be that the individuals in the selective introduction group were selected based on their generally more favorable attitude towards moving and exercising in general. This could have an effect on the assessment of innovation qualities in that these could be biased towards the positive side. However the intention of selecting individuals under the selective introduction approach was that they would display a favorable attitude towards moving and subsequently rate the innovation qualities higher compared to the individuals under the large scale approach.

4.2 Influence of introduction strategy on innovation quality assessment

The first part of the conceptual model is formed by the relationship of the introduction strategy on innovation quality assessment.

4.2.1 Relative advantage

For Relative advantage, two different measurement scales are used, following the work of Flight et al. (2011): social advantage and Relative advantage. The two different measurement scales are analyzed separately.

Social advantage

The first step is to determine if the data follows the normal distribution. Field (2013) suggests using the Kolmogorov-Smirnov test (K-S test) in order to determine if the data follows the normal distribution. A significant K-S test statistic (denoted by KS) implies that the data do not follow a normal distribution, and thus the underlying assumptions of the t-test are violated. Thus, subsequent analyses need to be carried out using a non-parametric test. (Field, 2013) suggests using the Mann-Whitney test as an alternative for the t-test in case the normality assumption has been violated.

For social advantage, the K-S test was insignificant (KS = 0.122, p = 0.07) , so we can conclude that the data follows a normal distribution and an independent samples t-test can be used in order to determine if the introduction strategy has an effect on social advantage quality assessment.

In order to test the effect of introduction strategy on the assessment of social advantage an one-tailed independent samples t-test was conducted. This test was found to be statistically non-significant, t (46) = -1.44, p = 0.08. These results indicate that there is insufficient evidence to conclude that individuals in the selective introduction group (M = 2.90, SD = 1.14) score social advantage higher compared to the large scale introduction group (M = 2.48, SD = 0.92).

Relative advantage

For Relative advantage, the K-S test was insignificant (KS = 0.111, p = 0.132) , so we can conclude that the data follows a normal distribution and an independent samples t-test can be used in order to determine if the introduction strategy has an effect on Relative advantage quality assessment.

In order to test the effect of the introduction strategy on the assessment of Relative advantage an one-tailed independent samples t-test was conducted. This test was found to be statistically non-significant, t (44) = -1.27, p = 0.106. These results indicate that is insufficient evidence to conclude that individuals in the selective introduction group (M = 3.14 , SD = 0.94) score higher on social advantage compared to the large scale introduction group (M = 2.85 , SD = 0.66).

Combining the results of both the Social advantage and Relative advantage constructs of Flight et al. (2011), one can conclude there is no statistical evidence for a significant effect of introduction strategy on the innovation quality ‘Relative advantage’.

4.2.2 Compatibility

For Compatibility, the K-S test was insignificant (KS = 0.104, p > 0.150) , so we can conclude that the data follows a normal distribution and an independent samples t-test can be used in order to determine if the introduction strategy has an effect on Compatibility quality assessment.

In order to test the effect of the introduction strategy on the assessment of Compatibility an one-tailed independent samples t-test was conducted. This test was found to be statistically significant, t (45) = -3.02, p = 0.002; d = 0.87. The effect size for this analysis (d = 0.87) was found to exceed Cohen’s convention for a large effect (d = .80) (Field, 2013). These results indicate that individuals in the selective introduction group (M = 3.57, SD = 0.91) score higher on Compatibility compared to the large scale introduction group (M = 2.80, SD = 0.86).

4.2.3 Simplicity

For Simplicity, the K-S test was significant (KS = 0.149, $p < 0.010$) , so we can conclude that the data do not follow a normal distribution and that a Mann-Whitney test can be used in order to determine if the introduction strategy has an effect on Simplicity quality assessment.

In order to test the effect of introduction strategy on the assessment of Simplicity a Mann-Whitney test was conducted. This test was found to be statistically non-significant, $W = 498.5$, $p > 0.05$. These results indicate that there is insufficient evidence to conclude that individuals in the selective introduction group ($\eta = 4.125$) score higher on Simplicity compared to the large scale introduction group ($\eta = 4.0$).

4.2.4 Triability

For Triability, the K-S test was significant (KS = 0.190, $p < 0.010$) , so we can conclude that the data do not follow a normal distribution and that a Mann-Whitney test can be used in order to determine if the introduction strategy has an effect on Triability quality assessment.

In order to test the effect of introduction strategy on the assessment of complexity a Mann-Whitney test was conducted. This test was found to be statistically non-significant, $W = 535.0$, $p = 0.470$. These results indicate that there is insufficient evidence to conclude that individuals in the selective introduction group ($\eta = 2.5$) score higher on Triability compared to the large scale introduction group ($\eta = 2.0$).

4.2.5 Observable result

For Observable result, the K-S test was insignificant (KS = 0,112, $p > 0,127$) , so we can conclude that the data follows a normal distribution and an independent samples t-test can be used in order to determine if the introduction strategy has an effect on Observable result quality assessment.

In order to test the effect of the introduction strategy on the assessment of Observable result an one-tailed independent samples t-test was conducted. This test was found to be statistically significant, t (45) = -1.68, $p = 0.050$; $d = 0.48$ The effect size for this analysis ($d = 0.48$) was found to closely approximate Cohen's convention for a medium effect ($d = .50$) (Field, 2013). These results indicate that individuals in the selective introduction group ($M = 3.20$, $SD = 1.09$) score Observable result higher compared to the large scale introduction group ($M = 2.74$, $SD = 0.83$).

4.2.6 Discussion of results

Next, the results of the statistical analyses are linked to the hypotheses stated in section 2.3. First, the hypothesis are discussed one by one. Finally, the findings of the underlying hypotheses are integrated, resulting in a conclusion regarding the part of the theoretical model regarding the relationship between introduction strategy and innovation qualities.

Introduction strategy on Relative advantage quality assessment

It was stated in section 2.3, hypothesis 1a that the selective introduction strategy would lead to a higher assessment of Relative advantage compared to the large scale promotion introduction approach. For both the constructs of Flight et al. (2011) for Relative advantage, there was no evidence for an effect of introduction strategy on the Relative advantage innovation quality. Apparently, the differences in the information gathering processes between the selective and large scale introduction approach do not influence the assessment of the Relative advantage of an

innovation. A possible explanation for finding insufficient evidence in support of hypothesis 1a could be in the fact that the qualities where measured after an extensive period of usage of the innovation. This could imply that the score on Relative advantage was biased to the information gathered from the usage period instead of the information gathered during the pre-usage period. In this regard, this poses a limitation of the research design. There could still be an effect of introduction strategy on Relative advantage quality assessment at the moment the user is in the consideration phase whether to adopt the innovation or not, however this effect was not taken into account by the research design.

Introduction strategy on Compatibility quality assessment

Hypothesis 1b stated that selective introduction strategy leads to a higher assessment of Compatibility compared to the large scale promotion introduction approach. Recall from section 2.1 that Compatibility is defined as "the degree to which the innovation adheres to norms and values of the audience". This hypothesis was confirmed by the statistically significant t-test with the introduction strategy representing a large effect size in the Compatibility score. The findings of the analysis imply that using the selective introduction differs significantly to the large scale approach regarding the assessment of Compatibility. However, care must be taken regarding the causality of the relationship. The results merely reflect that there is a difference in the information gathering process. An explanation for this result could be that by using the selective introduction approach individuals can gain more credible and personal tailored information regarding the Compatibility of the innovation in comparison to the large scale approach and thus can make a better assessment if the innovation adheres to the norms and values of the participant.

Introduction strategy on Simplicity quality assessment

For the relationship between introduction strategy and Simplicity, Hypothesis 1c stated that the selective introduction strategy would lead to a higher assessment of Simplicity compared to the large scale promotion introduction approach. This hypothesis was tested using the Mann-Whitney test. The test was statistically non-significant, thus providing insufficient evidence to support the hypothesis. Recall that the Simplicity innovation quality refers to how easy to use and understand the innovation is. The results of the test thus indicate that there is no significant difference between the groups as in how they rate the Simplicity quality of the innovation in question. The difference in the information gathering processes between the approaches don't seem to influence the perception of participants of how easy to use the innovation is. This could be in the fact that Simplicity is a quality that is better understood after the adoption decision rather than beforehand, and thus both groups will more or less rate Simplicity based on the product itself rather than from the information gathered beforehand. This reduces the influence of the introduction strategy on the Simplicity quality assessment which could account for the lack of statistical evidence in support of hypothesis 1c.

Introduction strategy on Triability quality assessment

Hypothesis 1d from section 2.3 stated that the selective introduction strategy leads to a higher assessment of Triability compared to the large scale promotion introduction approach. The Mann-Whitney test was statistically non-significant, providing insufficient evidence in support of hypothesis 1d. These findings contradict the expected relationship from theory. This in part can be explained by

the nature of the research subject (in this case Beweegze). Triability refers to the extent in which experimentation with the innovation is possible before the actual purchase. In both the selective introduction approach and the large scale approach there were very limited possibilities to experiment with Beweegze before purchase. This is also reflected in the relatively low scores (selective η = 2.5, large scale η = 2.0) for both groups on the Triability scale. It could well be that a different innovation with inherent different characteristics would produce other scores on this specific scale, and with the possibility of significant differences between the introduction approaches. This possess a limitation on this specific research design in that only one innovation is measured, thus limiting the generalizability of the findings.

Introduction strategy on Observable result quality assessment

The relationship between Observable result and introduction strategy was formulated in hypothesis 1e which stated that the selective introduction strategy would lead to a higher assessment of Observable result compared to the large scale promotion introduction approach. This hypothesis was confirmed by the statistically significant t-test with the introduction strategy representing a moderate effect size in the Observable result score. The findings support the view that the differences in the information gathering processes between the selective approach versus the large scale approach indeed lead to a higher assessment of this specific innovation quality for the selective introduction approach. Participants have more insight into how the innovation is beneficial to them under the selective approach compared to the large scale approach. This could be explained by the more dynamic nature of the information gathering process under the selective approach. By asking questions to peers with experience with the innovation as to how the innovation can be beneficial for the participant the more detailed and person-tailored the gathered information will be. The large scale approach doesn't allow this flexibility in information gathering and this in turn will lead to a more general assessment of how the innovation can be beneficial. The resulting difference in the groups between the assessment of Observable result after the adoption can in turn be explained by the fact that for individuals who score Observable result low before initial trial will eventually decide not to adopt the innovation. For the large scale introduction approach this 'bail-out' moment in the adoption process has to rely on less specific information, in turn leading to a higher adoption rate compared to the selective group but with a resulting lower average score on Observable result.

The effect of introduction strategy on innovation quality assessment

Integrating the findings of the individual hypothesis 1a -1e, there is partial evidence for a relationship between introduction strategy and innovation quality assessment. The analyses resulted in a significant effect of introduction strategy on the Compatibility and Observable result qualities. For the Relative advantage, Triability and Simplicity qualities there was insufficient evidence in support of the hypotheses. An explanation could be that there is a difference between the importance of the innovation qualities in different stages in the product use life cycle. For example the Simplicity, Relative advantage and Observable result qualities are more related to the actual use of the product rather than the decision whether to adopt the innovation or not. From this perspective it makes sense that there is no significant difference as to how these qualities are rated between the two experimental groups. For example, the Relative advantage quality is important during the whole lifecycle of the product. First, the quality needs to be sufficient in the adoption stage in comparison to other products to make the decision to adopt or not. But even after the adoption stage this quality

is constantly assessed in comparison to other products that would more or less do the same. If the quality is scored sufficiently, use will continue, and if not the innovation will be abandoned. The same logic applies to Simplicity and Observable result. During the whole lifecycle these qualities need to be higher in comparison to others to keep participants using the product. The relationship between the adoption process and innovation qualities is depicted in Figure 6.

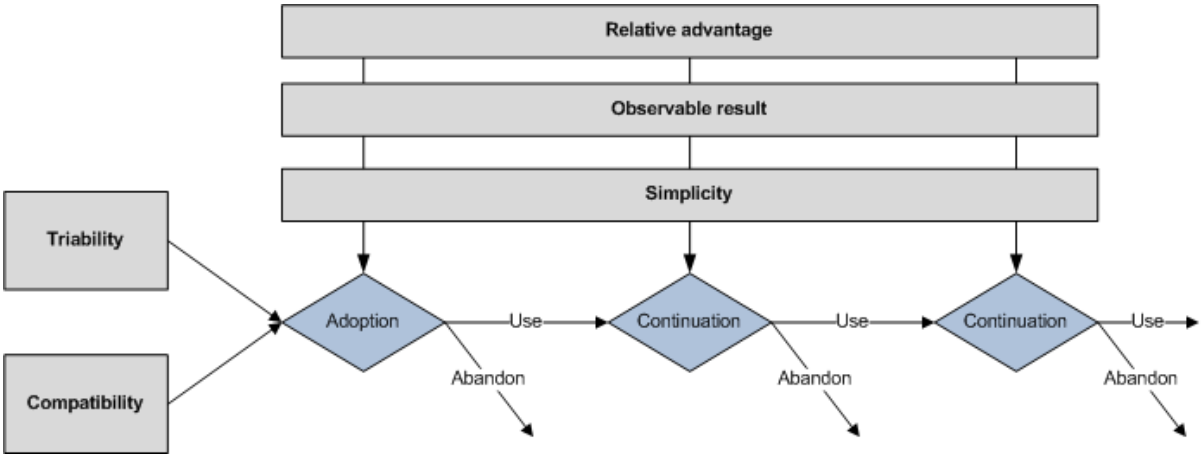

Figure 6: innovation qualities in relation to the lifecycle

For the qualities Triability and Compatibility, this assessment only takes place in the information gathering process before the adoption decision. As discussed earlier, an explanation for the difference in assessment between the two groups is that the selective approach gives more insight in the Compatibility quality by using peer information which is regarded more trustworthy by the potential adopter compared to the large scale approach. This is not the case for Triability, which is more a product trait in that the ability to experiment with the innovation does not depend on the introduction strategy but on the product itself.

4.3 Influence of innovation quality assessment on retention

As stated earlier, the measurement of retention was done with several measurement items in the questionnaire having different levels of measurement. Accordingly, the results of the regression analyses are also separately presented in this section.

4.3.1 Usage in one year

A multiple linear regression analysis was used to test if innovation qualities significantly predicted participants assessment of usage in one year.

The resulting model was statistically significant with F (6) = 2,69, p = 0.027, indicating that there is at least one innovation quality score being a statistically significant predictor of usage in one year. The model R^2 = 28,8% indicating that the model explains a moderate portion of the variance (Field, 2013).

Coefficient	β	SE β	P-value
Constant	-0.730	1.580	0.647
Relative advantage	0.925	0.357	0.013
Social advantage	-0.431	0.275	0.125
Simplicity	-0.050	0.279	0.859
Triability	0.291	0.214	0.181
Compatibility	-0.127	0.391	0.747
Observable result	0.474	0.304	0.127

Table 4: results regression analysis innovation qualities on usage in one year.

As can be observed in Table 4, there is one significant predictor for usage in one year at the α-level of 0.05. This predictor is Relative advantage. Since the other p-values do not exceed the 0.05 threshold, only Relative advantage is a significant predictor of 'Usage in one year'.

4.3.2 Future length of use

A multiple linear regression analysis was used to test if innovation qualities significantly predicted participants assessment of 'Future length of use'.

The resulting model was statistically non-significant with F (6) = 1.20, p = 0.324, indicating that innovation quality scores are a poor predictor of future length of use. The model R^2 = 15,3% indicating that the model explains only a relative small portion of the observed variance in Future length of use (Field, 2013).

Coefficient	β	SE β	P-value
Constant	0.448	0.894	0.619
Relative advantage	0.311	0.201	0.130
Social advantage	-0.053	0.155	0.735
Simplicity	0.013	0.158	0.935
Triability	0.069	0.121	0.569
Compatibility	0.039	0.221	0.862
Observable result	0.048	0.172	0.782

Table 5: results regression analysis innovation qualities on future length of use.

As can be observed in Table 5, there are no significant predictors for future length of use at the α-level of 0.05, in line with the overall results of the F-test of the regression model. In fact, all of the β's are statistically highly insignificant, with the exception of Relative advantage which comes closer to the threshold α-level of 0.05.

4.3.3 Discussion of results

Next, the results of the statistical analyses are linked to the hypotheses stated in section 2.4. First, the hypothesis are discussed one by one. Finally, the findings of the underlying hypotheses are integrated resulting in a conclusion regarding the part of the theoretical model regarding the relationship between innovation quality assessment and retention.

Relative advantage quality assessment on retention

Hypothesis 2a stated that Relative advantage quality would have a significant positive effect on retention. The two regression models give partial evidence for this hypothesis. For the Relative

advantage construct from Flight et al. (2011), the regression model for Usage in one year yields a significant positive regression coefficient at the α-level of 0.05. This is not the case for Future length of use. Relative advantage as defined by Flight seems to be able to predict usage continuation in the short term, but there is no significant evidence that it can predict the longevity of usage. The sign of the regression coefficient is positive, thus confirming the direction of the relationship as predicted in hypothesis 2a. In both models the Social advantage construct from Flight et al. (2011) was an insignificant predictor. The social advantage construct thus gives no insight at either short term or long run intentions of the continuation of usage by the participant. This suggests that participants focus more on the tangible side of the Relative advantage quality compared to the intangible benefits as represented by the social advantage construct in future use intentions. Combining the findings thus lead to partial support of the hypothesis that Relative advantage would have a significant positive effect on retention.

Compatibility quality assessment on retention

It was predicted in hypothesis 2b that Compatibility would have a significant positive effect on retention. The two regression models give insufficient evidence to confirm this relationship. Recall that the quality "Compatibility" refers to how an innovation meets up to the values and norms of the user. The lack of evidence for the relationship suggests that the assessment of the Compatibility construct could be important during the decision the adopt the innovation or not, but is less important in the later stages in the product lifecycle. It could well be that there is a single time evaluation of Compatibility towards the norm and values at that moment, and only when there is a change in the norms and values the Compatibility quality is reevaluated leading either to continuation of use or abandonment of the innovation. This effect was also discussed in section 4.2.6. The lack of evidence in support of hypothesis 2b reinforces the possible explanation that the Compatibility quality is predominantly important in the early stage of the adoption process.

Simplicity quality assessment on retention

For the Simplicity quality, hypothesis 2c predicted that there would be no significant effect on retention. This hypothesis is supported by both regression models, where the Simplicity quality is statistically a non-significant predictor for both Usage in one year as Future length of use. The underpinning for hypothesis 2c was mainly based on the view that the Simplicity quality is mainly evaluated at the decision point whether or not to adopt the innovation. As long as there are no significant improvements on this quality from competing products, there is no reason to reevaluate usage. Thus, for this quality the importance is mainly in the early stages in the product lifecycle, and of little to no importance in the later stages of the product lifecycle.

Triability quality assessment on retention

Hypothesis 2d predicted that Triability would have no significant effect on retention. This hypothesis was confirmed by both regression models, in which the Triability quality was shown to be a statistically non-significant predictor for both Future length of use and Usage in one year. For the Triability quality the same reasoning as for Simplicity applies. The quality is of importance during the early stages in the product lifecycle as to whether or not to adopt the innovation. It is enclosed in the definition of the quality itself: *'the extent to which the user can try or experiment with the innovation'* (Rogers, 2003). The quality enables the potential user to form an opinion regarding the other

qualities and thereby is important in the information gathering process preceding the decision to adopt the innovation. In the later stages of the lifecycle the quality is not of importance as the focus is shifted more to the performance of the innovation on the other qualities in comparison to competing products.

Observable result quality assessment on retention

For Observable result it was predicted in hypothesis 2e that there would be a significant positive effect on retention. This hypothesis was not supported by either of the two regression models, with the predictor being statistically non-significant in both models. Recall that Observable result refers to the extent a user experiences the benefits of the innovation. The mechanism underlying the effect of Observable result on retention was thought to be that the better the innovation can show its benefits to user, the more inclined the user would be to continue using the product. The results of the regression model do not support this view. A possible explanation for not finding the relationship as hypothesized could be that there is some sort of tipping point for Observable result. It has to reach a certain point on the scale where it shows that the innovation is beneficial to the user, but once that point is reached a higher assessment does not contribute to the likelihood of prolonged use. In other words, if the innovation keeps showing that it is beneficial to the user he will be inclined to keep using the innovation until a different innovation emerges which scores higher on the other qualities. From this, it follows that Observable result could more or less be viewed of as an 'enabling quality' for Relative advantage quality: as long as the innovation can show its benefits to the user, the user will be able to assess the Relative advantage quality in comparison to other products.

Innovation quality assessment on retention

Combining the findings regarding the hypothesis 2a – 2e, the overall effect of innovation quality assessment on retention can be described. The predictions regarding Simplicity and Triability qualities were confirmed by the regression models. This strengthens the view that these qualities are of main importance in the early stage of the lifecycle, but less so in keeping users using the product for an extended time. For the Simplicity quality, the findings of the regression analysis give more insight in the relationship between Simplicity and the continuation decision. In section 4.2.6 was stated that Simplicity was important during the complete lifecycle after the adoption decision. The results of the regression analyses suggest however that Simplicity is more important in the early stages in the lifecycle, and less so in the later stages. This additional insight in the relationship is displayed in Figure 7.

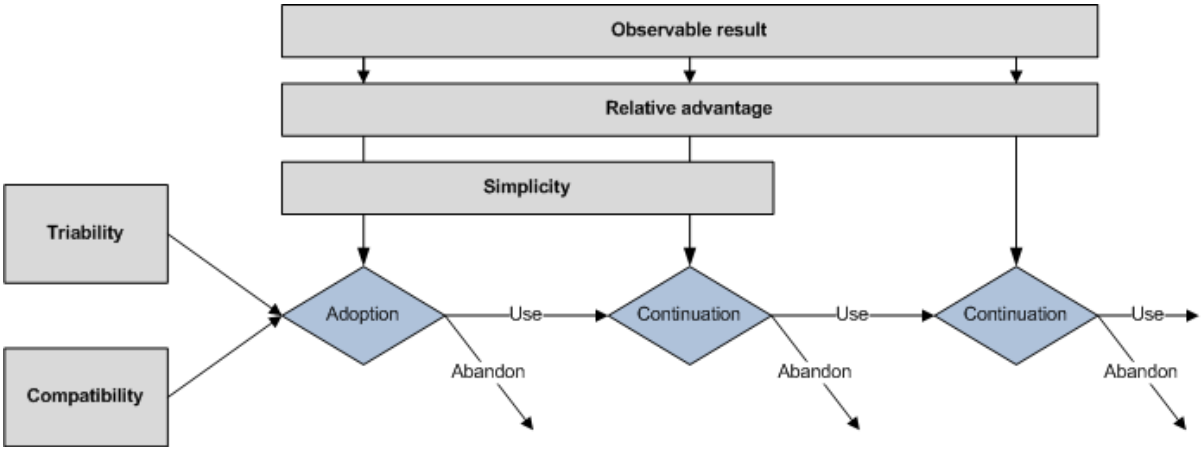

Figure 7: innovation qualities in relation to the stages in the lifecycle

For Compatibility and Observable result the predictions regarding the relationship were not confirmed by the regression models. For the Compatibility quality the same reasoning can be followed regarding the importance in the early stages of the lifecycle as for Simplicity and Triability. However, for Observable result, the relationship is seems more complex in nature. It was predicted that Observable result would have a direct positive relationship with retention. The analyses do not support a direct relationship. However, a possible explanation could be that the Observable result and Relative advantage quality are linked and that Observable result has an indirect effect on retention. The research design did not take into account the possibility of this indirect effect and thus no decisive verdict can be given regarding the nature of this relationship but this opens up a venue for future research. Regarding the overall effect of innovation quality assessment on retention, the most important quality in keeping users using the product for an extended period of time is Relative advantage. As long as the product keeps ahead of its competitors in showing results for the users, the user will be inclined to prolong use.

5 Discussion

With the results of the statistical analyses and the subsequent conclusions regarding the hypotheses, the focus of this chapter is to further integrate the findings and subsequently answer the research questions underlying this research project. First the theoretical implications are discussed. Second the managerial and implications for Beweegze are discussed, which concludes this master's thesis.

5.1 Implications to science

In this section the implications to science are discussed. First the main findings are discussed. Second the limitations of the research design are discussed. The section concludes with a discussion of the possibilities for future research.

5.1.1 Findings

This goal of this master's thesis was to determine the effect of the launch strategy on innovation quality assessment and subsequent retention.

Effect of introduction strategy on innovation quality assessment

The first research question underlying this effect was to determine if the introduction strategy would have an influence on the assessment of innovation qualities. For the introduction strategy, two different options where under consideration: the large scale introduction strategy versus the selective introduction strategy. It was hypothesized that the selective introduction strategy would lead to a higher innovation quality assessment due to a different information gathering process where more emphasis is placed on information gathered in the social network, compared to the large scale introduction approach. In order to determine this effect a two-stage model was developed which first assessed the effect of the introduction strategy on innovation quality assessment. It was found that the selective introduction approach leads to a higher average assessment of the qualities Observable result and Compatibility compared to the large scale approach. For the qualities Simplicity, Triability and Relative advantage there was insufficient evidence to conclude that the introduction strategy influences the average quality assessment.

Effect of innovation quality assessment on retention

The second stage of the model was the effect of innovation quality assessment on retention. This stage of the model was developed to answer the second research question posed in building the theoretical model. This question was to determine if a higher assessment of innovation qualities by the user would lead to a longer usage period of the innovation. The underlying hypothesis was that for the innovation qualities Relative advantage, Compatibility and Observable result a positive relationship would exist between the assessment and prolonged use intentions. From the subsequent regression analyses it followed that only for Relative advantage partial evidence for the relationship was present in the data. The lack of evidence for the hypotheses regarding the Compatibility and Observable result qualities indicate that these qualities are less important in keeping users prolonging the use of the product. For the qualities Triability and Simplicity no relationship to retention was predicted, which was confirmed by the analysis. These qualities thus seem to be most important during the early stages in the product life cycle.

Relationship between introduction strategy, innovation qualities and retention

Integrating the findings of the two stage model gives insight in the relationship between introduction strategy, innovation quality assessment and subsequent retention. The findings suggest that there is no direct relationship between the introduction strategy and retention. None of the innovation qualities that are found to be influenced by the introduction strategy are significant predictors for retention. Thus, the introduction strategy has no direct effect on retention. However, care has to be taken regarding this conclusion. Since the research model did not directly incorporate the influence of introduction strategy on length of use and future use intentions, but using the innovation qualities as an intermediate step conclusions regarding a direct effect are difficult to draw. This limitation will be elaborated further in the limitations section of this chapter.

The results do suggest that in the early stages of the lifecycle the introduction strategy does have an effect on the decision whether or not to adopt the innovation, but the focus shifts more to innovation qualities that can be viewed to be tangible product qualities during the later stages in the lifecycle. For example, the selective introduction approach leads to a higher average assessment of the Compatibility quality, but this quality is of no influence in the later decisions regarding the continuation of usage. Closer inspection of the qualities and the findings suggest that there is a distinction to be made between qualities that matter only during the initial decision to adopt the innovation and qualities that support the subsequent continuation decisions regarding the innovation.

Contribution to science

The findings of this research contribute to current scientific knowledge in several areas. First it gives new insight in the importance of the introduction strategy on innovation quality assessment and its importance in the early stages of the product lifecycle, extending the work of Rogers (2003) and Schepers and Wetzels (2007), by providing more insight in the mechanisms underlying the concepts of peer conversation and subjective norm. For this several concepts are use from social network theory regarding the role of trust, proactivity and position in the social network, thus giving the work of Burt (1997, 2000), Gabbay and Zuckerman (1998), Thomas et al. (2010) and Nooteboom (2001) regarding social networks and the role of trust and proactivity a new application in the theory regarding the adoption of innovations. Additionally, this research also contributes to the scientific knowledge regarding the effect of innovation qualities on the intentions of users to prolong use, thus extending the work of Rogers (2003) and Schepers and Wetzels (2007) by extending the view past the initial trial towards building up a sustainable user base of the innovation. This enables a broader application of these models for innovations where the focus is mainly based on building and keeping a long term relationship with the customer as the cornerstone of its business model. It was shown that during the later stages in the lifecycle the focus shifts more to the actual performance of the innovation compared to its competitors and that other qualities seem to be of little importance.

5.1.2 Limitations

This research has several limitations, of which the main limitations will be discussed in this section.

Two stage model

The first limitation arises from the two stage model approach employed in this research. Because of the two stage approach care must be taken when interpreting the conclusions considering the effect of the introduction strategy on retention. In the second stage of the research model the data of both experimental groups was pooled in order obtain a sufficiently large sample for the regression model under the assumption that the innovation qualities by itself would influence future use intention. By doing so, conclusions regarding the effect of introduction strategy on retention can only be of an indirect nature.

In order to assess the effect of introduction strategy on retention, two additional regression models were tested where in addition to the effect of innovation qualities on retention, the introduction strategy was incorporated as a dummy variable using the procedure described by Hair et al. (2009). The results of the additional models can be found in appendix VIII. While the model regarding the effect of innovation qualities and introduction strategy on Usage in one year was significant ($p = 0,035$), the regression coefficient for introduction strategy was insignificant ($p = 0,331$). This leads to the conclusion that the data collected in this study does not reflect a direct effect of introduction strategy on retention. The model regarding innovation qualities and introduction strategy on Future length of use was insignificant ($p = 0,396$) indicating no effect of introduction strategy and innovation qualities on Future length of use.

Single measurement moment

The second limitation of this research is formed by the single measurement moment of the innovation qualities and future use intentions. It thus only provides a snapshot of how the innovation qualities and future use intentions at that single moment in time where it was evaluated. This is the case for both the innovation quality assessment and retention items. The use of a single moment in time make it impossible to determine if innovation quality assessment would either improve of degrade over time and the same logic applies for future use intentions. For example, it may be expected that in the early stages the qualities are scored higher, but after a while when the user gets more acquainted with the innovation it is scored lower because the innovation didn't live up to the expectations. This in turn could have an effect on future use intentions. This dynamic nature of constantly reevaluating the innovation qualities and future use intentions was not incorporated by using the single measurement moment approach.

Single research subject

The third limitation of this study was that there was only a single research subject under consideration in both experimental groups. It could well be that different innovations display different behaviors regarding the introduction strategy and innovation quality assessment at various stages in the lifecycle. And thus leading to different profiles regarding the importance of the introduction strategy on innovation quality assessment. In addition, different competition profiles of innovation enhances this effect. For example, an innovation suffering from heavy competition in the marketplace compared to one with less competition is expected to have a different innovation

quality assessment during its lifecycle. This limits the external validity and thus the generalizability of the findings of this study.

Sample size

At last, the fourth major limitation of this research was formed by the relatively small sample size. Although the sample size was sufficiently large following the guidelines of Field (2013) regarding the detection of large effect sizes, the sample is too small to detect different types of relationships other than the linear relationship as used in this research. For some of the innovation qualities it was argued that using a linear relationship between innovation quality and retention would not be an accurate description of the true nature of the relationship which would be more of a curvilinear type. The sample size should be larger In order to detect such differences in the types of relationships (Field, 2013).

5.1.3 Future research

With the discussion of the main findings and the limitations of this study, future research venues can be explored. In this section some of these venues for further research are discussed. Looking back at the limitations of this study, the main focus of future research should be placed on two pillars: first reproducing the results in order to generalize the findings and second obtaining more insight in the exact nature of the relationship between innovation quality assessment and retention at various stages in the lifecycle.

Replication

In order to address the first point regarding the generalizability the specific research model used in this master's thesis could be used on a variety of different innovations as to determine if the results are only applicable in this specific context or if they apply to a broader array of different innovations. One specific alteration should be made in the research design as to improve the generalizability of the findings when replicating the results. This alteration encompasses the complete separation of the experimental groups. In this research, the samples where both drawn from within the organization with a risk of cross contamination and thus influencing the results. If future research opens the possibility of completely eliminating the risk of cross contamination, this option should be taken into consideration. The main focus of the replicating efforts should be placed regarding the effect of the introduction strategy on innovation quality assessment.

Nature of relationships

The second venue for future research encompasses determining the exact nature of the relationship between innovation quality assessment at different stages in the lifecycle of the innovation. As discussed in the section regarding the limitations of this research, more measurement points over the innovation lifecycle should be incorporated into the research design as to capture the apparently more dynamic nature of the innovation quality assessment over time. Also a sufficiently large enough sample should be obtained in order to gain insight in the nature of the relationships. For example, are there interaction effects between innovation qualities and their effect on retention, or are the relationships linear or curved in nature are questions to be answered by future research. Looking forward on this venue for future research, the relationship between Observable result and Future length of use and Usage in one year was examined by drawing scatterplots of these variables.

Observable result was thought to have a different nature than the linear relationship as assessed in the previous analyses. These scatterplots can be found in appendix IX. The scatterplots however are fairly randomly distributed, and there are too little data points to reveal a pattern thus giving little information regarding a relationship between these variables (Field, 2013).

Retention scale

A different direction for future research would be to develop a validated scale to measure future use intentions. For this specific study, a few questionnaire items were developed to measure retention by the lack of a validated instrument in the current body of scientific literature. The items used in this questionnaire seem to be a good proxy of future use intentions. However, the development of a validated measurement instrument for retention would be a good addition to the body of scientific knowledge and could have a broader application in various other research fields like for example research regarding the effects of marketing strategies on long term use.

Incorporation of customer satisfaction and loyalty

A different stream of research focusses on the role of customer satisfaction on customer loyalty as described in the American Customer Satisfaction Index (ACSI) (Johnson, Gustafsson, Andreassen, Lervik, & Cha, 2001). The ACSI model uses customer satisfaction as an intermediary concept between perceived value, quality and customer expectations on customer loyalty and complaint behavior. On initial inspection, the concept of customer loyalty does show similarities to the retention concept of this study. However, the concept of customer loyalty in the context of the ACSI model is defined as the repurchase likelihood (Johnson et al., 2001). This is conceptually different from the retention construct as used in this study where the main focus is placed on longevity of product use instead of repurchase likelihood. Another criticism of the model is that all the relationships regarding perceived value, quality and customer expectations are mediated by customer satisfaction (Johnson et al., 2001). However, Johnson et al. (2001) argue that the degree of mediation depends on the strength of the overall evaluation. As a result, quality and/or value may have some direct effect on loyalty that is not mediated by satisfaction. They propose to add a direct path from perceived quality to customer loyalty, which could be argued to display similarities to the second stage of the model used in this study. This opens up some interesting venues for future research as the incorporation of customer satisfaction to the conceptual model used in this study could better explain the relationship between quality and retention by incorporating customer satisfaction as an intermediary. However more work is needed in the development of a sound theoretical foundation in incorporating customer satisfaction as an intermediary for the retention construct.

5.2 Managerial implications

In this section the managerial implications of the findings are discussed. First the general managerial implications are presented. The section concludes with specific recommendations for Beweegze.

5.2.1 General managerial implications

The practical implications of this study mainly arise from the notion that different introduction strategies indeed have an influence at innovation quality assessment and thus have an impact at the adoption and subsequent continuation decisions that an user makes over the lifecycle of the product. This insight can be used to form an introduction strategy depending on the type of product and the possibility for the intended audience to form an opinion regarding the innovation qualities. By using

the selective introduction approach subsequent users are offered the possibility to use peer to peer conversations with experienced users and thus are able to make a better decision if the product will live up to the expectations.

Business to business model

The findings of this study are mainly of use for products where the business model is more focused on prolonged use in comparison to products where revenue is only generated at the purchase decision moment. For example, products that rely on some type of subscription or other upstream revenue model need to keep users aboard as long as possible, while keeping the costs associated with users abandoning the product during the early stages as low as possible. For these cases an introduction strategy with low costs and the benefit for subsequent users to use the peer to peer information gathering process outperforms the large scale approach in which a large group tries the product but also quickly stops using the product. The selective introduction strategy can be viewed as a good option in the early stages of product launch as little costs are incurred, whilst building an user base which can be used in the later peer to peer information gathering process by prospective users. In the later stages of product launch more emphasis can be placed on the traditional large scale introduction method as to reach a large audience, which in turn is backed up by the users generated by the selective introduction approach.

In addition to the findings regarding the effect of the introduction strategy on innovation quality assessment, another interesting finding is that during the later stages in the product lifecycle the most dominant quality for an innovation in relation to prolonged use is Relative advantage, or in other words keep outperforming its competitors. Whilst this is true for almost all products in the marketplace, the findings of this research give more insight in why this is true for innovations relying on the product being used for an extended period of time in generating revenue. If an innovation can keep showing its relative advantage over competing products, the likelihood of prolonged use increases. This means that for an innovation that relies on prolonged use in its business model, it is important to keep supporting the product in the long run as to maintain the competitive advantage over competing products. This is especially the case for those products where the switch costs between products are relatively low.

5.2.2 Recommendations to Beweegze

In this section the recommendations for Beweegze resulting from the research project are presented. Recall that this master's thesis set out to answer the following question:

Develop a strategy in order to facilitate adoption of Beweegze throughout participating companies that maximizes the likelihood of companywide adoption under the condition that the autonomy of individual employees to participate in life style programs is maintained.

What Beweegze was looking for, is a strategy that encourages people to use the product for as long as possible. Recall that the initial trial only generates a small earning in comparison to the revenue generated by purchases in the online shop. Thus, it is important the strategy used in the adoption approach also facilitates usage in the long run. During the analysis stage of the project, two different introduction strategies were identified that could be used to launch Beweegze, the traditional large scale introduction approach where there is a large role for promotional activities and advertising. The competing approach is formed by the selective introduction approach under which a few key

individual are identified and introduced by the product and further growth comes from the word of mouth generated by these key individuals.

It was expected that the selective introduction approach would lead to a higher assessment of innovation qualities and this in turn would lead to higher retention. The results of this study suggest that for Beweegze, the selective introduction approach helps in the early stages of the lifecycle. More specifically it performs better during the adoption decision but performs equally to the large scale approach in the later stages in the lifecycle. The selective introduction approach seems to overcome the product inherent limitations regarding the Triability quality. It is difficult to try Beweegze before the initial purchase and thus form an opinion about how the product will perform compared to competitors and how the product is compatible with the norms and values of the user. Rather than using a large advertisement campaign highlighting these qualities, the selective introduction approach gives participants a way of gathering information from peers to form an opinion regarding these qualities. This is in turn could lead to a higher company adoption rate.

Strategy

Earlier work in the field of the adoption of innovations argued that the use of promotional activities is necessary to overcome inertia in the start of adoption process (Sterman, 2000). By using promotional activities the innovation is introduced in the population as to start the conversation in the social network and thereby introducing a probability of adoption on the individual level. However, it is not specified of what these promotional activities should encompass. The concept of the selective introduction strategy as developed in this master thesis can be viewed of as a form of promotional activity contradicting the traditional advertisement approach to which large costs are associated compared to the selective approach. By using the selective introduction approach, the models developed by Sterman (2000) still apply as the selective introduction approach replaces the role of advertisement in the feedback loops of these models. Extending this notion, the most promising strategy would likely be to use a hybrid strategy where in the early stages of the introduction approach a selective approach can be taken in order to build up a base of enthusiastic users and use these as catalyst during a large scale introduction strategy later in time. By using the hybrid approach potential users in the later stage in the adoption cycle are able to tap into the experience of the key users of the early stages regarding the qualities for which it is difficult to convey the information using the large scale approach. This process is depicted in Figure 8.

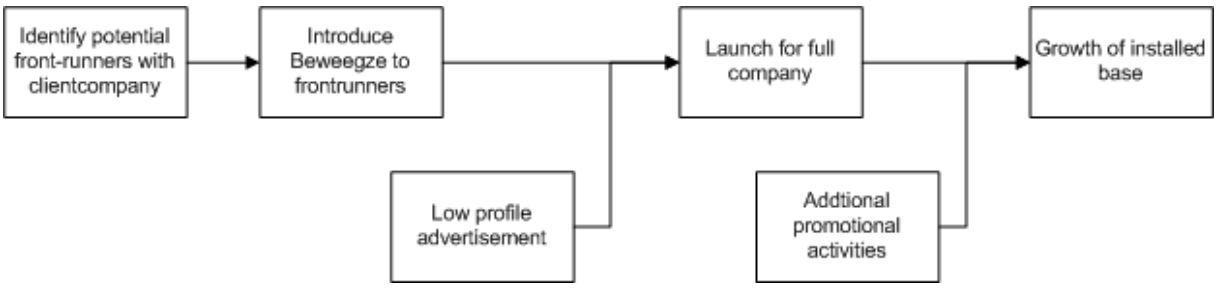

Figure 8: process model hybrid introduction strategy

The process starts after the client company decides to launch Beweegze. The first step is determining possible frontrunners that in the opinion of the client company have a favorable attitude towards Beweegze and can serve as good representatives in the future. These frontrunners will be offered Beweegze to experiment with and form their opinion, thus kick starting the word of mouth in the

social network. In addition, some small scale promotional activities such as newsletters can be employed referring to the front runners for more detailed information. This can be viewed of as the launch of Beweegze in the client company. After the launch, additional promotional activities can be employed as to further increase awareness and to aid in the further adoption of Beweegze. The contents of these additional promotional activities can be tailored based on the actual adoption rate and ambitions of the client company.

Model confirmation

A second recommendation for Beweegze is to confirm the model in subsequent launches in other companies. By doing so, comparisons can be made between launches in order to gain more insight in which cases the launch strategy does or does not perform as expected. The questionnaire as developed in this master thesis can serve as a tool to further gather this information regarding the attitudes of participants regarding Beweegze. The easiest way to do so is by building the questionnaire into the platform so that participants automatically get an invitation to fill out the questionnaire after a given period of time. This also gives the opportunity to further fine-tune the selective introduction approach by for example varying the number of frontrunners or the intensity of the accompanying promotional activities between companies and in turn compare adoption and retention rates between different organizations.

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Appendix I: questionnaire

JvR

ThesisTools

Enquête Preview

Enquête maken in 4 stappen:

Stap 1: *Enquete Instellingen*
Stap 2: *Enquete Overzicht*
Stap 3: *Enquete Preview*
Stap 4: *Enquete Publiceren*

Homepage: *Hoofdmenu*
Extra: *Extra diensten*

Pagina: 1

In dit onderzoek wordt de relatie tussen de kwaliteit zoals beoordeeld door de gebruiker van een nieuw product (in dit geval Beweegze) en het gebruik op langere termijn van het product onderzocht.

In de enquête zult u bevraagd worden hoe u Beweegze scoort op een aantal kwaliteiten zoals benoemd in literatuur omtrent innovaties. Daarnaast zult u vragen krijgen omtrent het huidige gebruik van Beweegze en uw toekomstige gebruiksintenties.

Het onderzoek zal ongeveer 10 minuten duren om in te vullen. Bij voorbaat hartelijk dank voor uw medewerking aan dit onderzoek.

Start

Pagina: 2

1.

Wat is uw leeftijd? *

- ○ Jonger dan 18
- ○ 18 tot 24 jaar
- ○ 25 tot 34 jaar
- ○ 35 tot 44 jaar
- ○ 45 tot 54 jaar
- ○ 55 tot 64 jaar
- ○ 65 jaar of ouder

2.

Wat is uw geslacht? *

- ○ Man
- ○ Vrouw

3.

Wat is uw hoogst voltooide opleiding? *

- ○ Geen opleiding voltooid
- ○ Lagere school/basisonderwijs
- ○ LBO, VBO, LTS, LHNO, VMBO
- ○ MAVO, VMBO-t, MBO-kort
- ○ MBO, MTS, MEAO
- ○ HAVO, VWO, Gymnasium
- ○ HBO, HEAO, PABO, HTS
- ○ Universiteit
- ○ Anders, namelijk

4.

Hoeveel tijd in minuten besteed u per week aan de volgende activiteiten?

Fietsen (niet zijnde sport)	
Lopen (niet zijnde sport)	
Huishouden/tuinieren	
Sporten	

5.

Wat voor beweger bent u?

Weer of geen weer, ik ga er op uit	○ ○ ○ ○ ○	Het moet natuurlijk wel een beetje lekker weer zijn
Wandelaar	○ ○ ○ ○ ○	Hardloper
Ik beweeg bewust	○ ○ ○ ○ ○	Ik beweeg nu eenmaal omdat ik beweeg
Liever lui dan moe	○ ○ ○ ○ ○	Liever moe dan lui
Altijd de trap	○ ○ ○ ○ ○	Als het kan de lift
Ik beweeg omdat het moet	○ ○ ○ ○ ○	Ik beweeg omdat ik het wil

Kwaliteiten

Pagina: 3

De volgende vragen hebben betrekking op de kwaliteiten van BeweegZe zoals u deze ervaart. De vragen zijn per kwaliteit gegroepeerd.

6.

Zichtbaarheid

	Helemaal mee oneens				Helemaal mee eens
Ik kan zien dat BeweegZe door anderen gebruikt wordt	○	○	○	○	○
Als ik BeweegZe ga gebruiken, kunnen anderen dit zien	○	○	○	○	○
Het is normaal om BeweegZe bij anderen in gebruik te zien	○	○	○	○	○
Het is gemakkelijk om over BeweegZe aan anderen te vertellen	○	○	○	○	○

7.

Probeerbaarheid

	Helemaal mee oneens				Helemaal mee eens
BeweegZe kan uitgeprobeerd worden zonder direct tot koop verplicht te worden	○	○	○	○	○
BeweegZe kan uitgeprobeerd worden voordat het gekocht is	○	○	○	○	○

8.

Compatibiliteit

	Helemaal mee oneens				Helemaal mee eens
BeweegZe past bij hoe ik mijzelf zie	○	○	○	○	○
BeweegZe past bij mijn leefstijl en sociale omgeving	○	○	○	○	○
Het gebruik van BeweegZe is sociaal geaccepteerd	○	○	○	○	○
Het gebruik van BeweegZe wordt positief ontvangen in mijn sociale omgeving	○	○	○	○	○
Veel van mijn vrienden of familie zouden BeweegZe ook willen gebruiken	○	○	○	○	○

9.

Sociaal voordeel

	Helemaal mee oneens				Helemaal mee eens
Het is vanuit sociaal oogpunt wenselijk om BeweegZe te gebruiken	○	○	○	○	○
Het gebruik van BeweegZe geeft een grote sociale beloning	○	○	○	○	○
Anderen zouden onder de indruk zijn van het gebruik van BeweegZe door mij	○	○	○	○	○
Het gebruik van BeweegZe maakt indruk op mijn vrienden en familie	○	○	○	○	○

10.

Relatief voordeel

	Helemaal mee oneens				Helemaal mee eens
BeweegZe is makkelijker in het gebruik ten opzichte van andere producten die dagelijkse beweging inzichtelijk maken	○	○	○	○	○
BeweegZe is betrouwbaarder in het gebruik ten opzichte van andere producten die beweging inzichtelijk maken	○	○	○	○	○
BeweegZe levert mij voordelen op ten opzichte van andere beweegmeters	○	○	○	○	○
BeweegZe stelt mij in staat kosten te besparen	○	○	○	○	○
BeweegZe heeft een gunstige prijs/kwaliteit verhouding ten opzichte van andere producten die beweging inzichtelijk maken	○	○	○	○	○

11.

Complexiteit

	Helemaal mee oneens				Helemaal mee eens
De gebruiksaanwijzing van BeweegZe is ingewikkeld	○	○	○	○	○
Het neemt behoorlijk wat tijd in beslag om te leren hoe BeweegZe werkt	○	○	○	○	○
Er zijn speciale vaardigheden nodig om BeweegZe te installeren en te gebruiken	○	○	○	○	○
BeweegZe is technisch gezien complex in gebruik	○	○	○	○	○

Toekomstig gebruik

De volgende vragen zijn gericht op uw huidige gebruik van BeweegZe en toekomstige gebruiksintenties. Daarnaast worden een aantal vragen gesteld over eventuele behoeftes die u zou kunnen hebben ter aanvulling op het huidige product BeweegZe.

12.

Ik gebruik BeweegZe sinds

Vul in 1 1

13.

Ik zie mijzelf BeweegZe nog ... gebruiken

- minder dan 1 jaar
- tussen 1 en 3
- meer dan 3 jaar

14.

Geef uw mening

	Helemaal mee oneens				Helemaal mee eens
Ik ben enthousiast over BeweegZe					

15.

Geef uw mening

	Helemaal mee oneens				Helemaal mee eens
Ik zou BeweegZe ook gebruiken als ik geen Beweegpunten zou krijgen					
Ik heb voldoende motivatie om door te gaan met het gebruiken van BeweegZe					
Ik gebruik BeweegZe waarschijnlijk nog over een jaar					
Ik heb behoefte aan een competitie-element					
Ik wil mijn prestaties kunnen vergelijken met anderen					
Ik heb behoefte aan aandacht voor andere leefstijladviezen					
Ik heb behoefte aan andere bestedingsmogelijkheden voor mijn Beweegpunten					

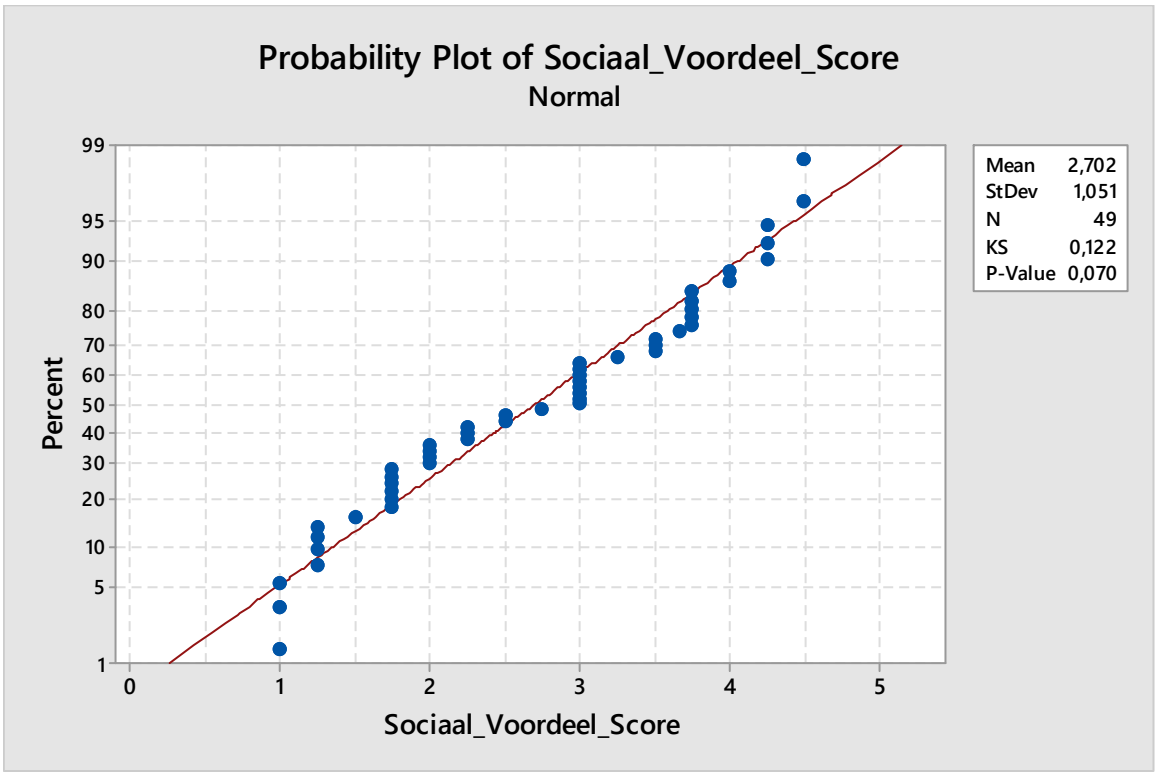
U bent aan het einde gekomen van deze enquête.

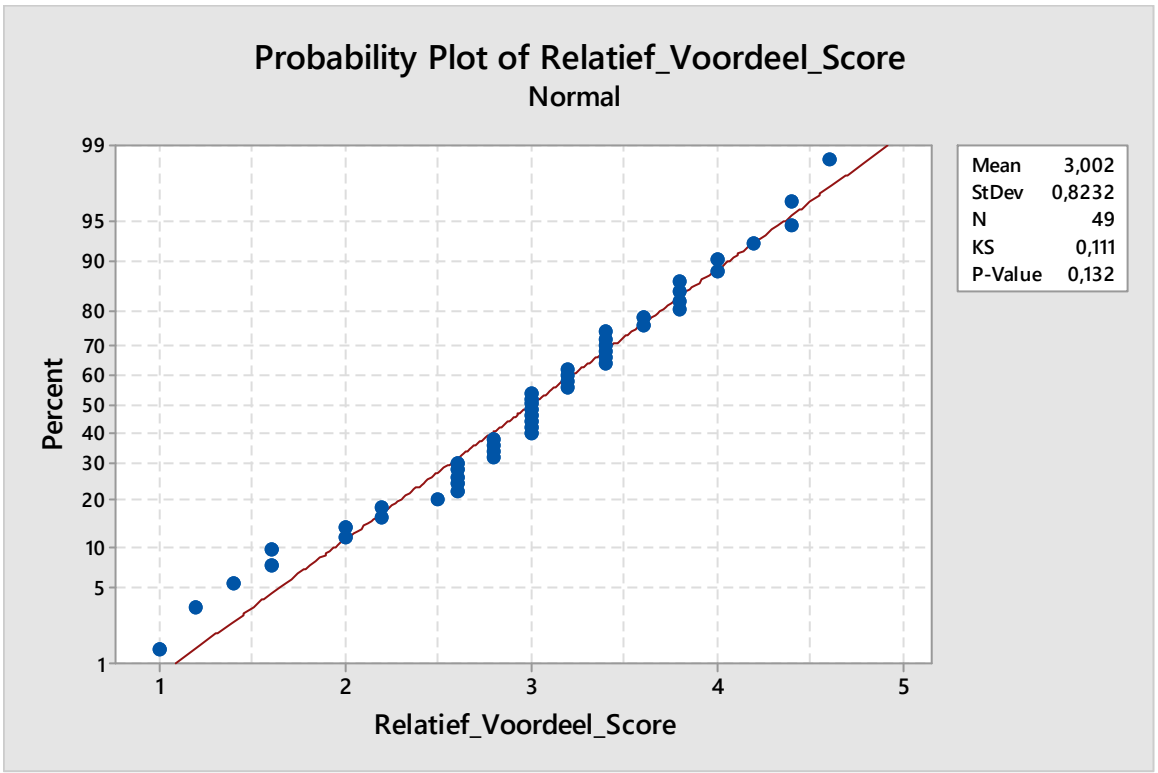
Hartelijk dank voor uw tijd en medewerking aan dit onderzoek.

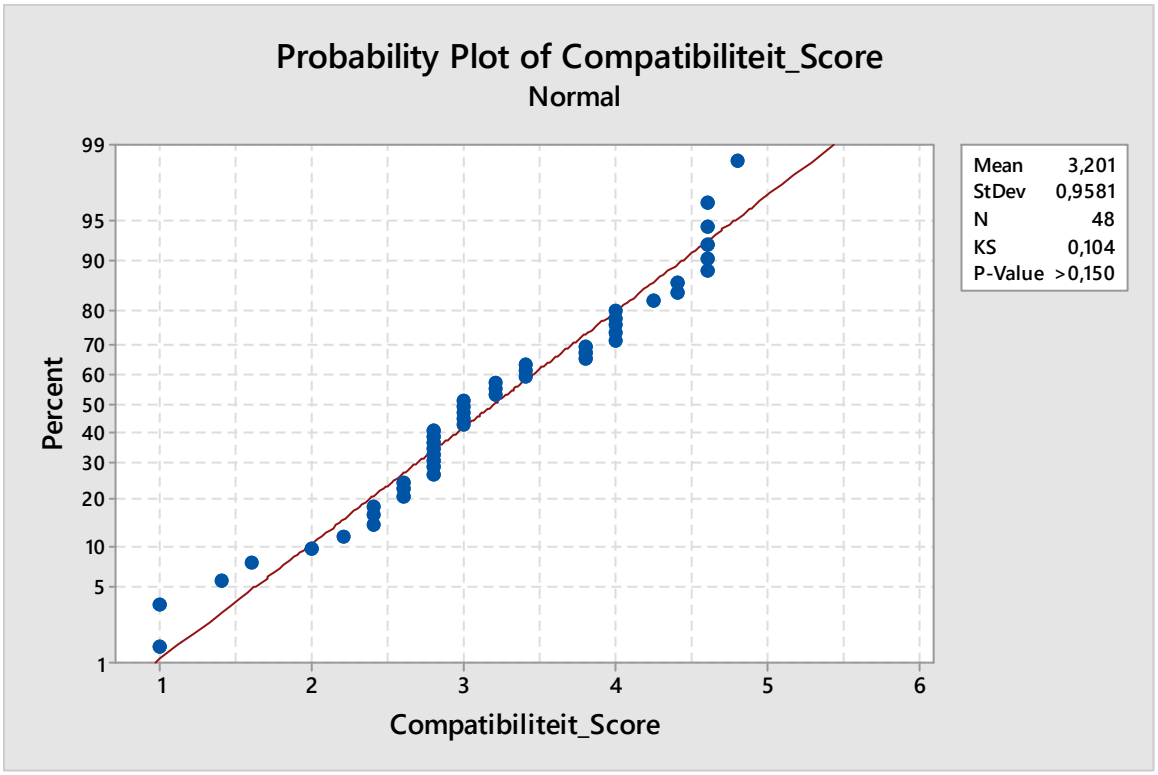
Gerard de Joode
Student TU/e
Master Innovation Management

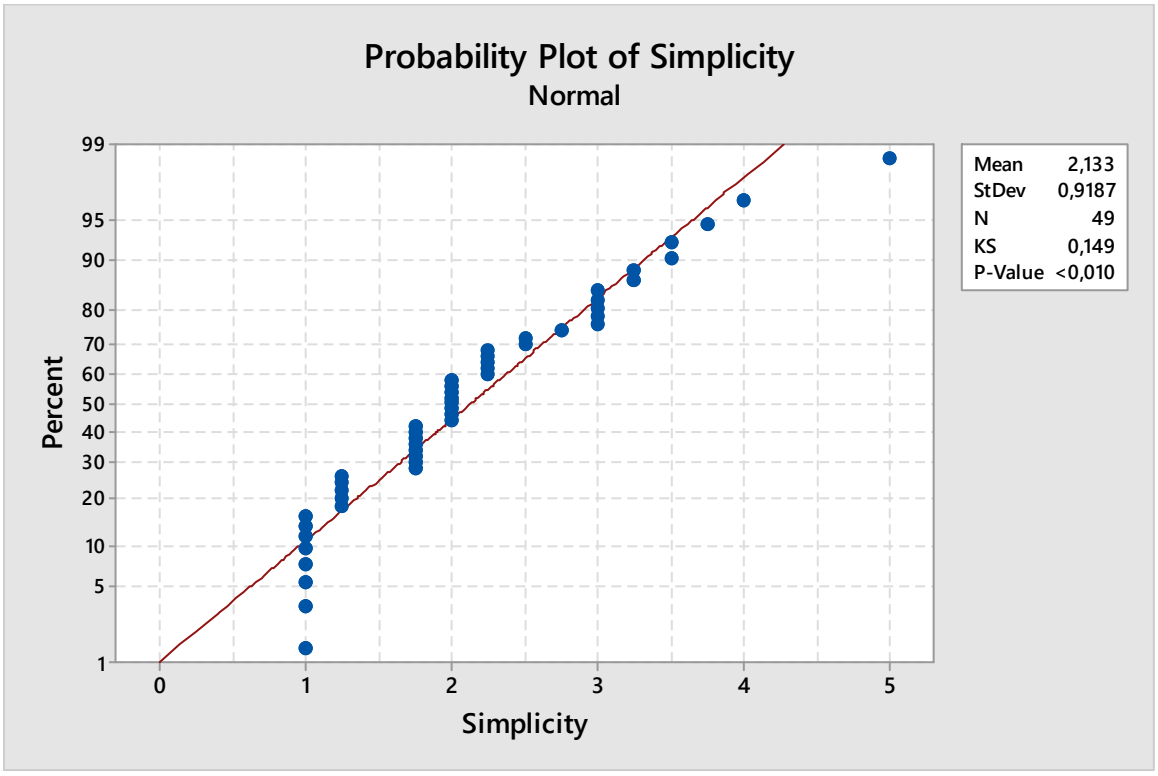
Appendix II: normality test results

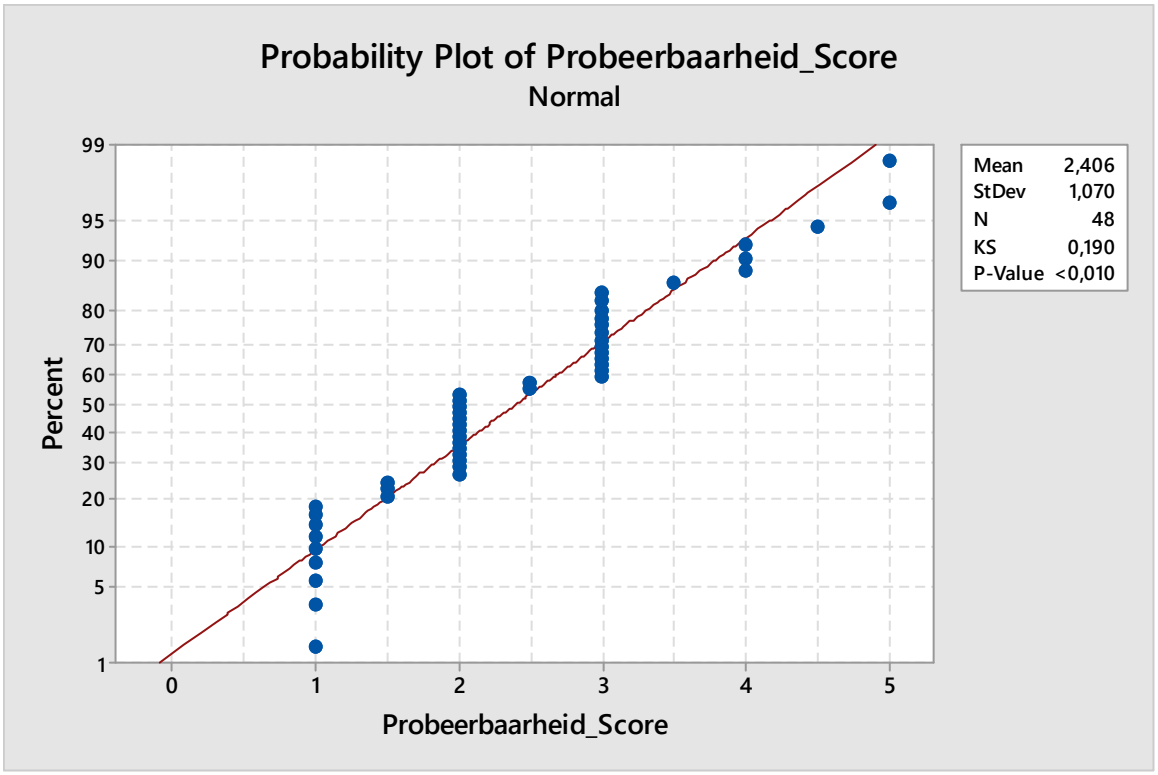
Social advantage

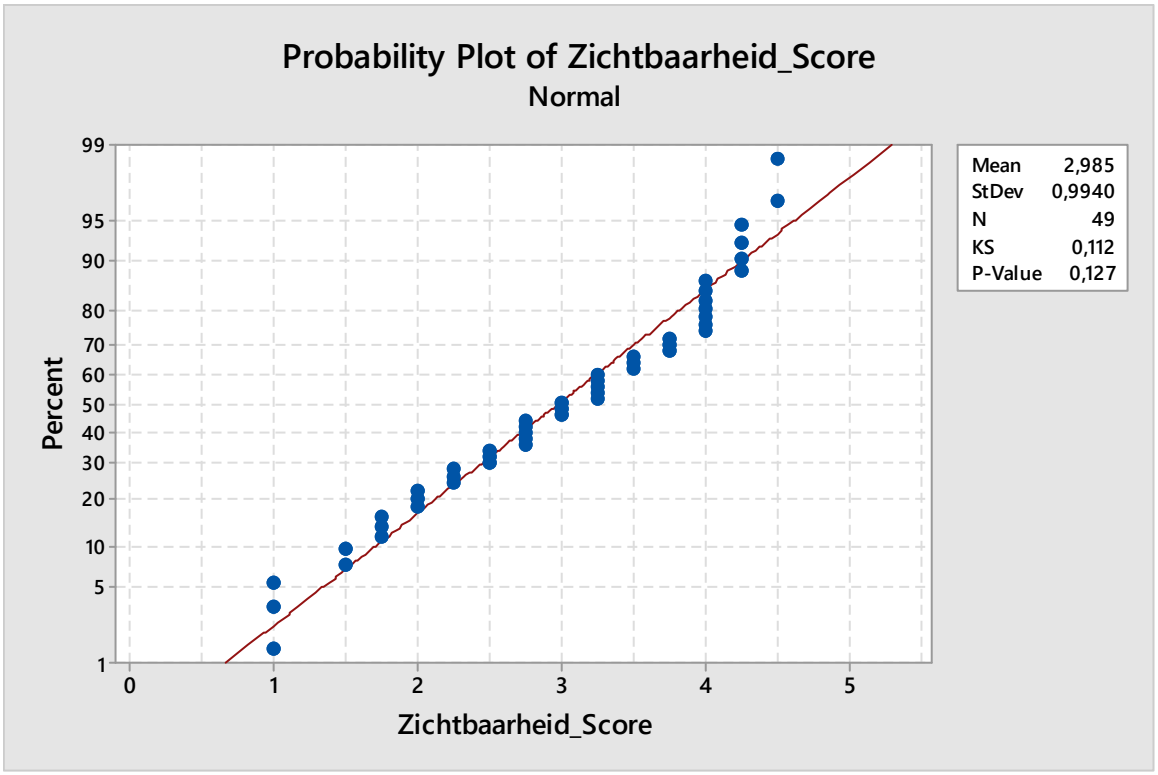





Probability Plot of Compatibiliteit_Score
Normal
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1
2
3
4
5
6
Compatibiliteit_Score
Mean 3,201
StDev 0,9581
N 48
KS 0,104
P-Value >0,150


Probability Plot of Simplicity
Normal
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
0
1
2
3
4
5
Simplicity
Mean 2,133
StDev 0,9187
N 49
KS 0,149
P-Value <0,010


Probability Plot of Probeerbaarheid_Score
Normal
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
0
1
2
3
4
5
Probeerbaarheid_Score
Mean 2,406
StDev 1,070
N 48
KS 0,190
P-Value <0,010


Probability Plot of Zichtbaarheid_Score
Normal
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
0
1
2
3
4
5
Zichtbaarheid_Score
Mean 2,985
StDev 0,9940
N 49
KS 0,112
P-Value 0,127

Appendix III: output of statistical analyses

Two-sample T for Sociaal_Voordeel_Score

Groep	N	Mean	StDev	SE Mean
1	23	2,478	0,917	0,19
2	26	2,90	1,14	0,22

Difference = μ (1) - μ (2)
Estimate for difference: -0,422
95% upper bound for difference: 0,071
T-Test of difference = 0 (vs <): T-Value = -1,44 P-Value = 0,079 DF = 46

Two-sample T for Relatief_Voordeel_Score

Groep	N	Mean	StDev	SE Mean
1	23	2,848	0,658	0,14
2	26	3,138	0,938	0,18

Difference = μ (1) - μ (2)
Estimate for difference: -0,291
95% upper bound for difference: 0,095
T-Test of difference = 0 (vs <): T-Value = -1,27 P-Value = 0,106 DF = 44

Two-sample T for Compatibiliteit_Score

Groep	N	Mean	StDev	SE Mean
1	23	2,800	0,855	0,18
2	25	3,570	0,912	0,18

Difference = μ (1) - μ (2)
Estimate for difference: -0,770
95% upper bound for difference: -0,342
T-Test of difference = 0 (vs <): T-Value = -3,02 P-Value = 0,002 DF = 45

Mann-Whitney test on Simpliciteit_Score

	N	Median
Simpliciteit_group 1	23	4,0000
Simpliciteit_group 2	26	4,1250

Point estimate for η1 - η2 is -0,5000
95,2 Percent CI for η1 - η2 is (-1,0000;-0,0000)
W = 498,5
Test of η1 = η2 vs η1 > η2

Cannot reject since W is < 575,0

Mann-Whitney test on Probeerbaarheid_Score

	N	Median
Probeerbaarheid_group 1	22	2,000
Probeerbaarheid_group 2	26	2,500

Point estimate for η1 - η2 is -0,000
95,2 Percent CI for η1 - η2 is (-1,000;1,000)

W = 535,0
Test of η1 = η2 vs η1 < η2 is significant at 0,4711
The test is significant at 0,4704 (adjusted for ties)

Two-sample T for Zichtbaarheid_Score

Groep	N	Mean	StDev	SE Mean
1	23	2,739	0,827	0,17
2	26	3,20	1,09	0,21

Difference = μ (1) - μ (2)
Estimate for difference: -0,463
95% upper bound for difference: -0,001
T-Test of difference = 0 (vs <): T-Value = -1,68 P-Value = 0,050 DF = 45

Regression Analysis: Lengte_Gebru versus Zichtbaarhei; Probeerbaarh; Compatibilit; ...

Method

Rows unused 11

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	6	4,1080	0,68466	1,20	0,324
Zichtbaarheid_Score	1	0,0442	0,04422	0,08	0,782
Probeerbaarheid_Score	1	0,1878	0,18780	0,33	0,569
Compatibiliteit_Score	1	0,0174	0,01741	0,03	0,862
Sociaal_Voordeel_Score	1	0,0662	0,06620	0,12	0,735
Relatief_Voordeel_Score	1	1,3560	1,35603	2,38	0,130
Simpliciteit_Score	1	0,0038	0,00379	0,01	0,935
Error	40	22,7431	0,56858		
Total	46	26,8511			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0,754041	15,30%	2,59%	0,00%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	0,448	0,894	0,50	0,619	
Zichtbaarheid_Score	0,048	0,172	0,28	0,782	2,43
Probeerbaarheid_Score	0,069	0,121	0,57	0,569	1,37
Compatibiliteit_Score	0,039	0,221	0,17	0,862	3,52
Sociaal_Voordeel_Score	-0,053	0,155	-0,34	0,735	2,11
Relatief_Voordeel_Score	0,311	0,201	1,54	0,130	2,31
Simpliciteit_Score	0,013	0,158	-0,08	0,935	1,77

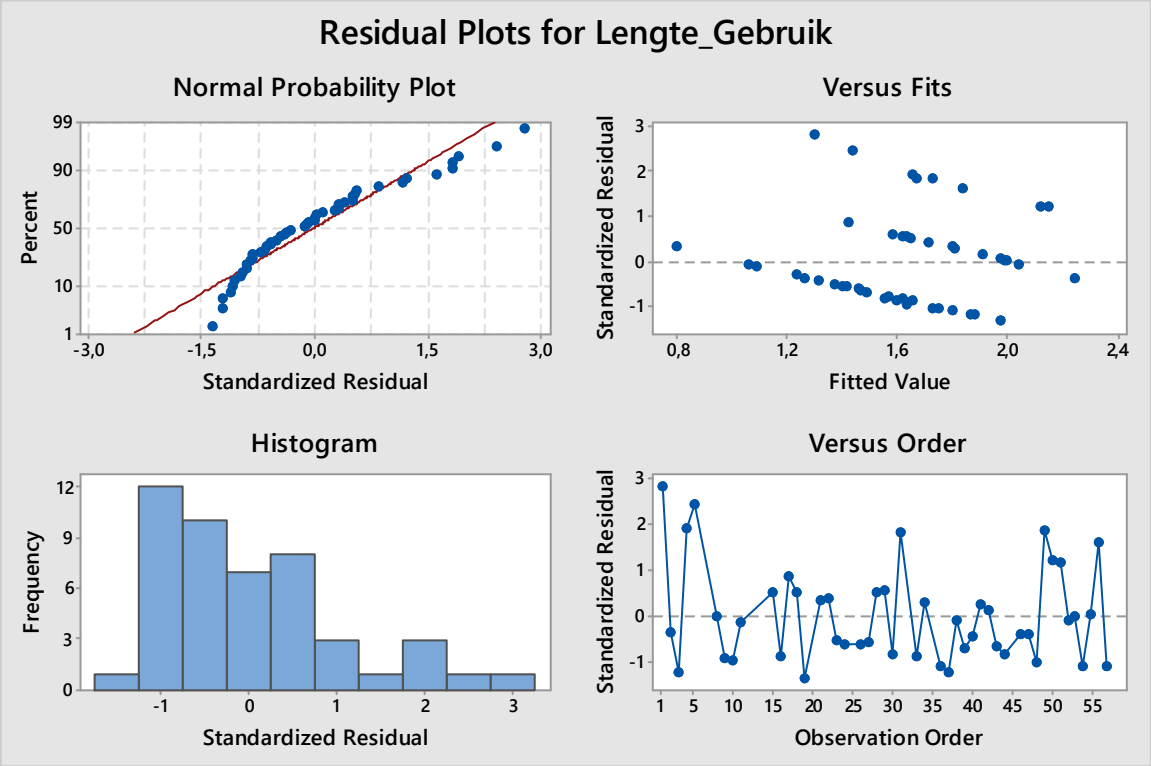
Regression Equation

Lengte_Gebruik = 0,448 + 0,048 Zichtbaarheid_Score + 0,069 Probeerbaarheid_Score
+ 0,039 Compatibiliteit_Score - 0,053 Sociaal_Voordeel_Score
+ 0,311 Relatief_Voordeel_Score + 0,013 Simpliciteit_Score

Fits and Diagnostics for Unusual Observations

Obs	Lengte_Gebruik	Fit	Resid	Std Resid	
1	3,000	1,302	1,698	2,80	R
5	3,000	1,440	1,560	2,44	R

R Large residual



Regression Analysis: Gebruik_Jaar versus Zichtbaarhei; Probeerbaarh; Compatibilit; ...

Method

Rows unused 11

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	6	28,816	4,8027	2,69	0,027
Zichtbaarheid_Score	1	4,340	4,3399	2,43	0,127
Probeerbaarheid_Score	1	3,310	3,3105	1,85	0,181
Compatibiliteit_Score	1	0,188	0,1884	0,11	0,747
Sociaal_Voordeel_Score	1	4,388	4,3882	2,46	0,125
Relatief_Voordeel_Score	1	12,018	12,0179	6,73	0,013
Simpliciteit_score	1	0,057	0,0570	0,03	0,859
Error	40	71,396	1,7849		
Total	46	100,213			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1,33601	28,76%	18,07%	0,00%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-0,430	0,972	-0,44	0,660	
Zichtbaarheid_Score	0,474	0,304	1,56	0,127	2,43
Probeerbaarheid_Score	0,291	0,214	1,36	0,181	1,37
Compatibiliteit_Score	-0,127	0,391	-0,32	0,747	3,52
Sociaal_Voordeel_Score	-0,431	0,275	-1,57	0,125	2,11
Relatief_Voordeel_Score	0,925	0,357	2,59	0,013	2,31
Simpliciteit_score	-0,050	0,279	-0,18	0,859	1,77

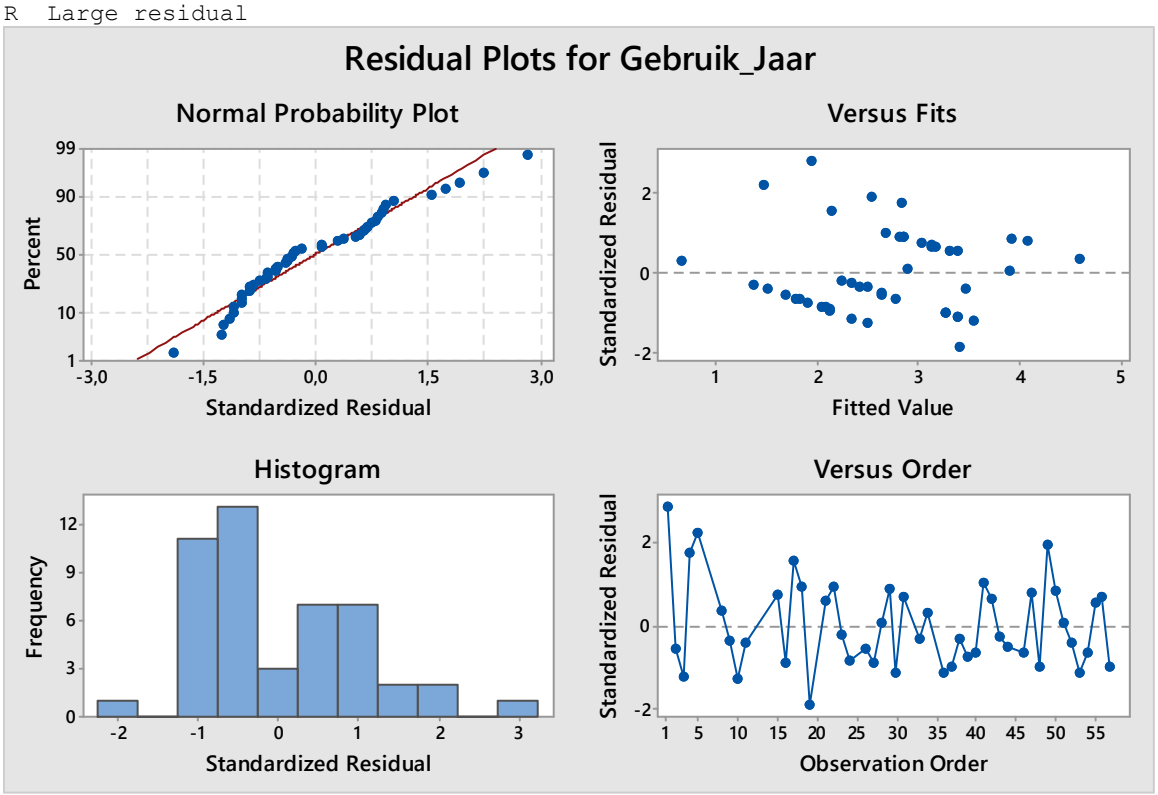
Regression Equation

Gebruik_Jaar = -0,430 + 0,474 Zichtbaarheid_Score + 0,291 Probeerbaarheid_Score
- 0,127 Compatibiliteit_Score - 0,431 Sociaal_Voordeel_Score
+ 0,925 Relatief_Voordeel_Score - 0,050 Simpliciteit_score

Fits and Diagnostics for Unusual Observations

Obs	Gebruik_Jaar	Fit	Resid	Std Resid	
1	5,000	1,947	3,053	2,85	R
5	4,000	1,463	2,537	2,24	R

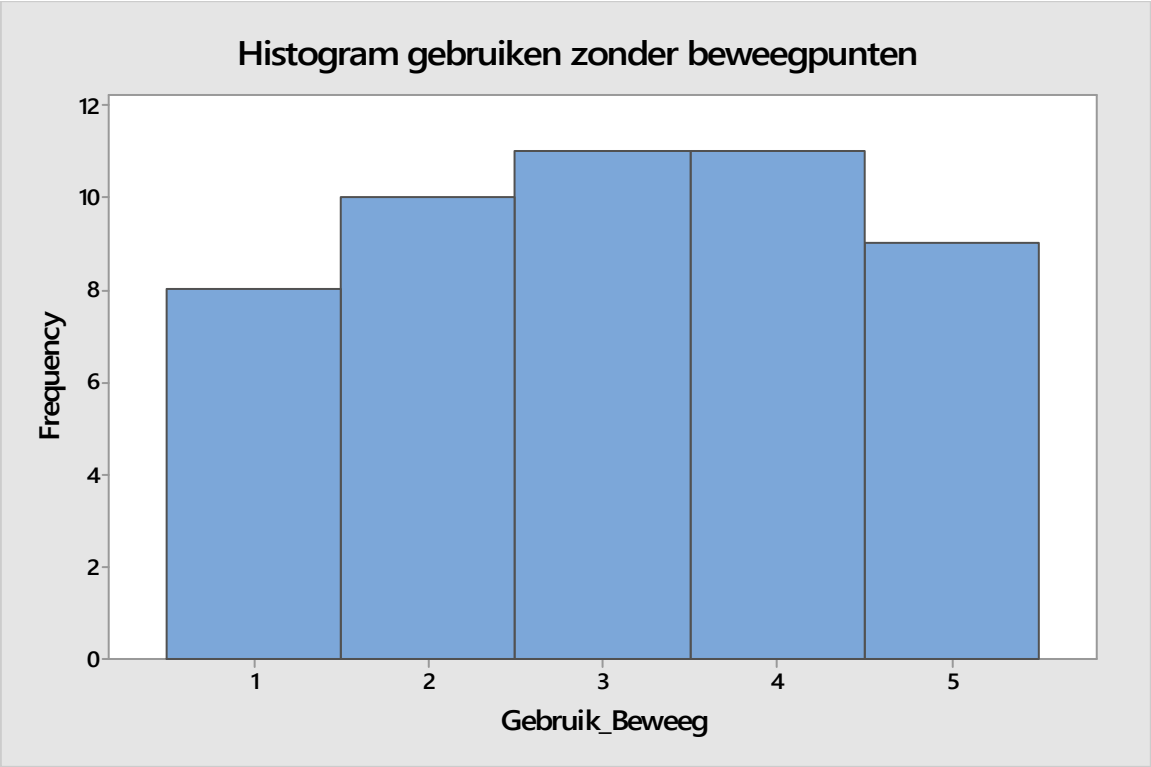
R Large residual



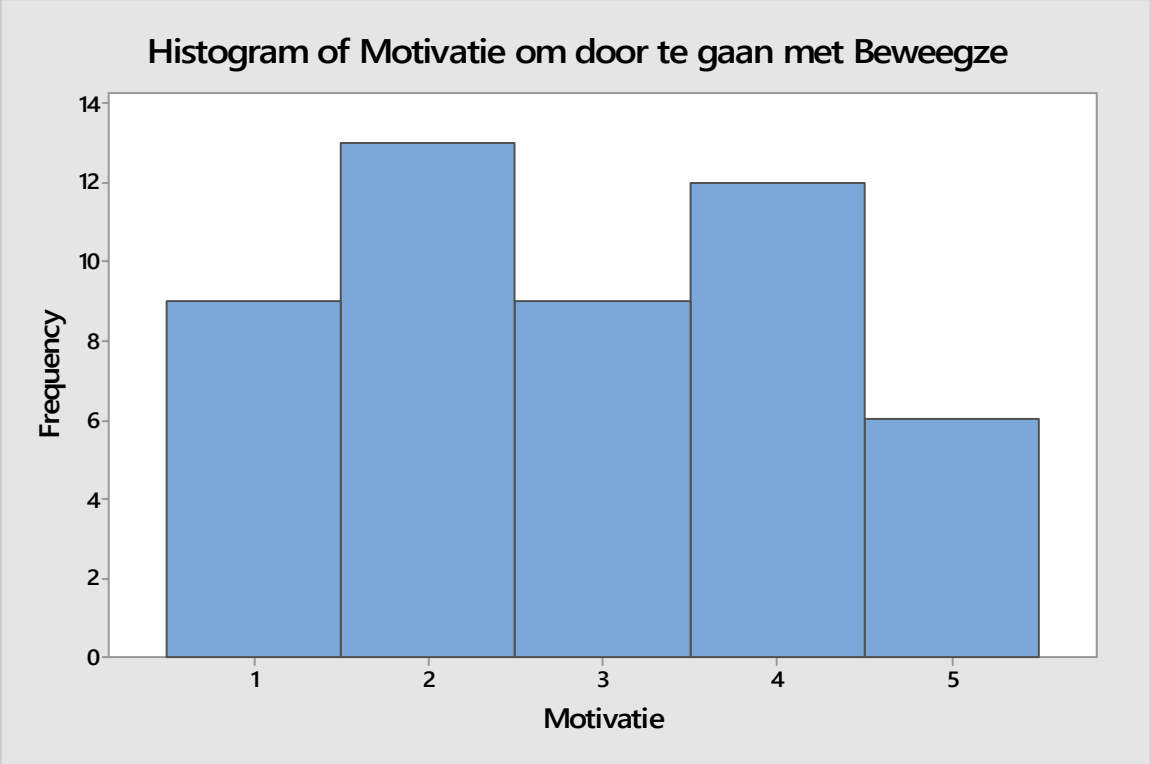
Appendix IV: results questions for improvement of Beweegze

All answers range from 1 (helemaal mee oneens) to 5 (helemaal mee eens)

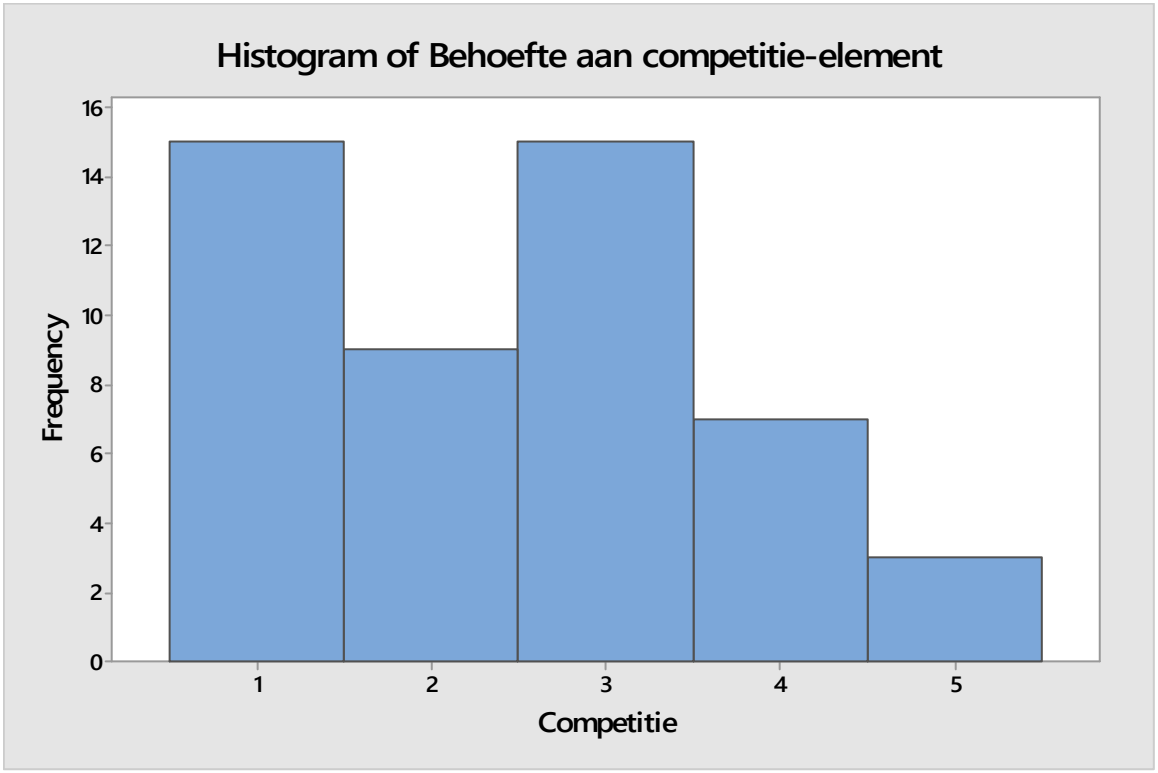
Ik zou Beweegze ook gebruiken als ik geen beweegpunten zou krijgen



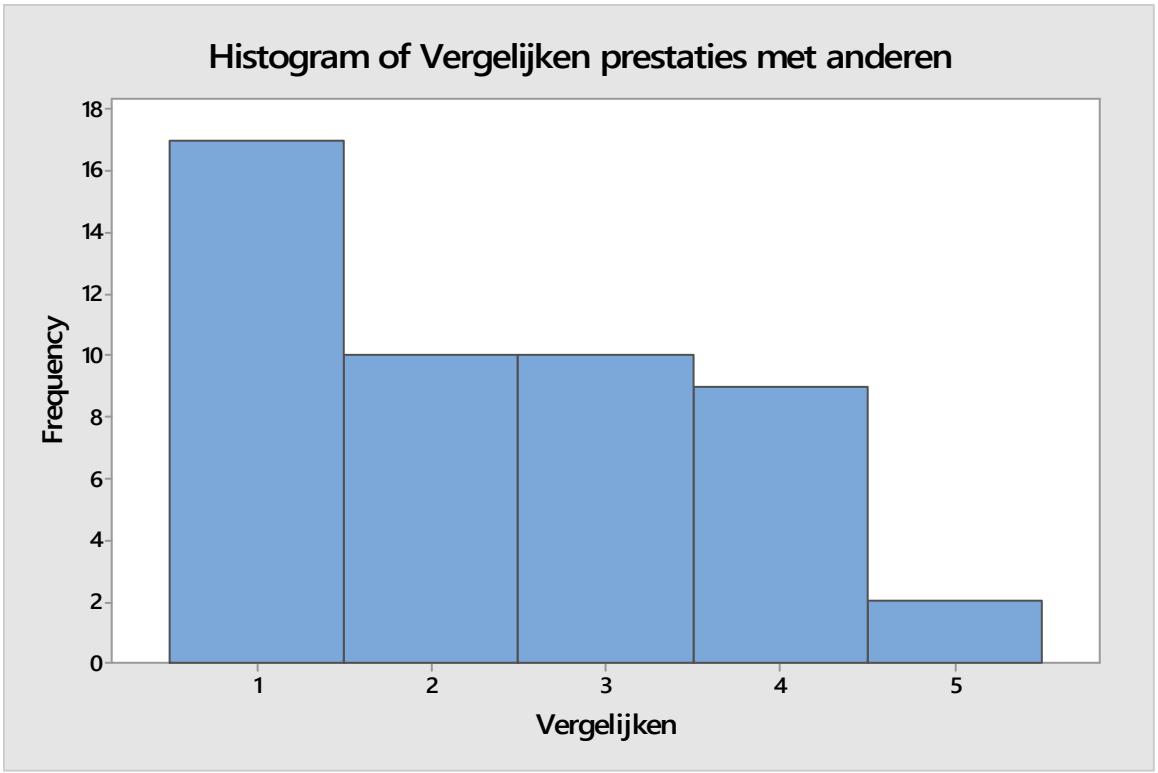
Ik heb voldoende motivatie om door te gaan met het gebruiken van Beweegze



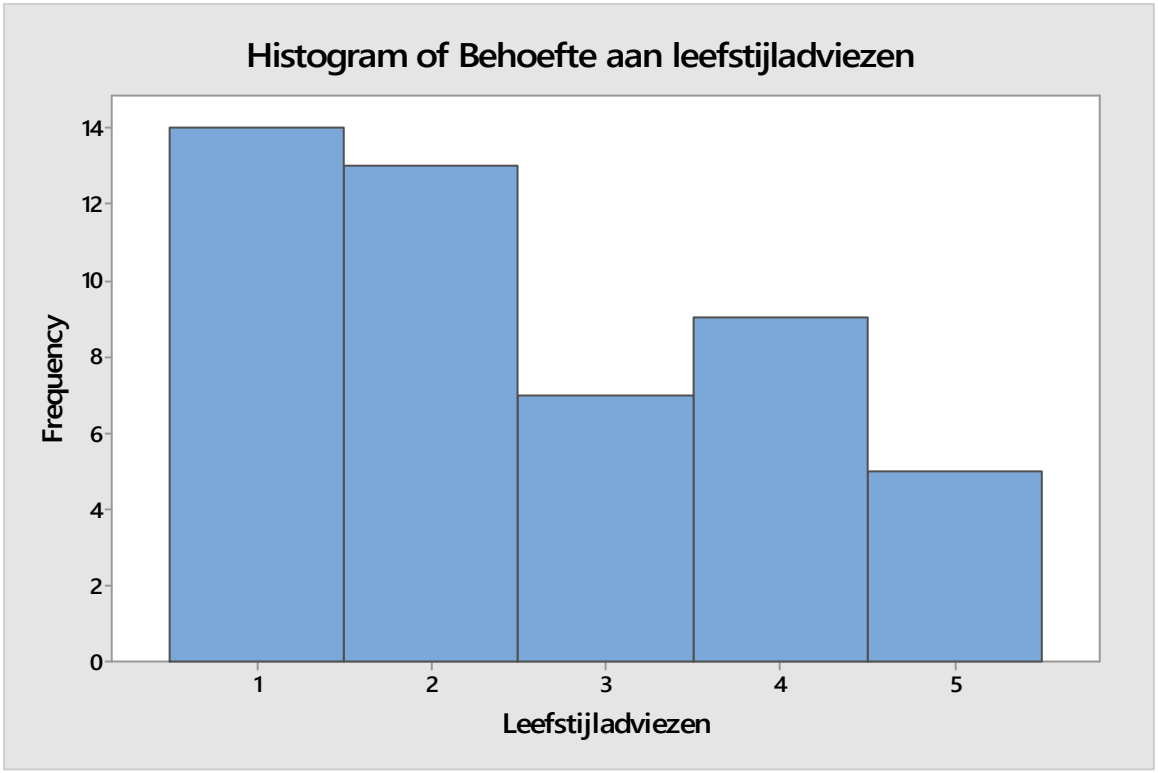
Ik heb behoefte aan een competitie-element



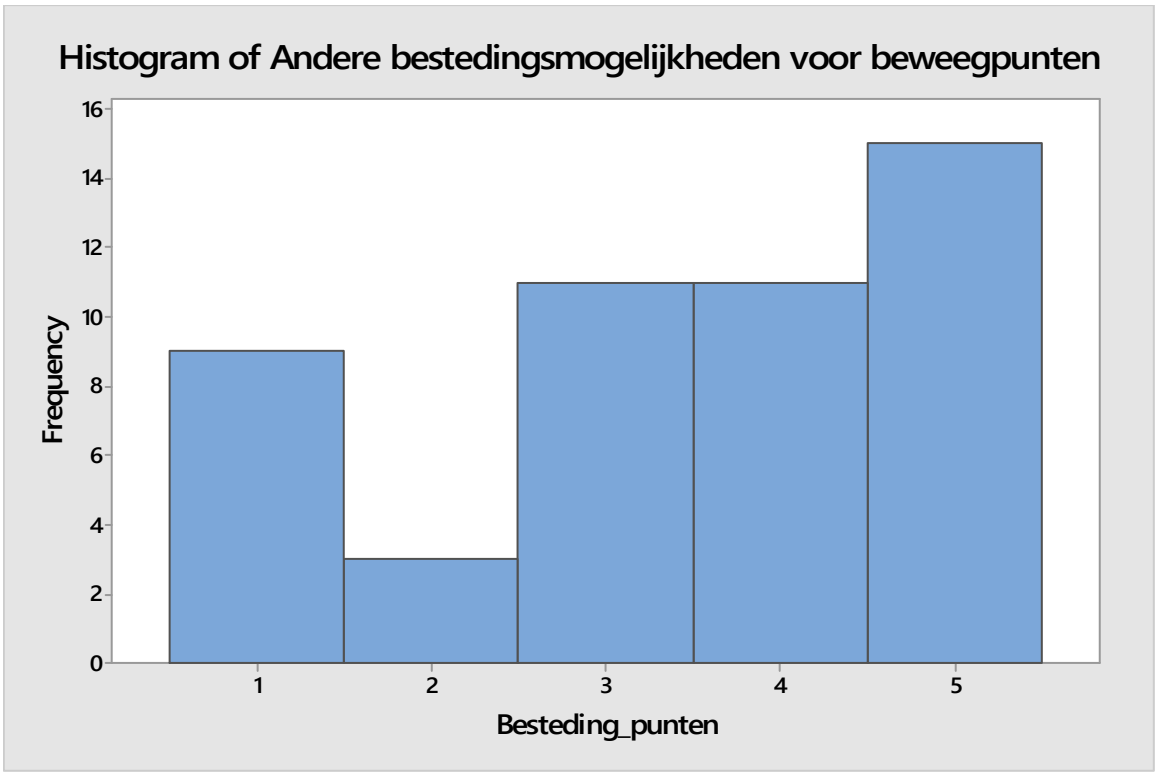
Ik wil mijn prestaties kunnen vergelijken met anderen



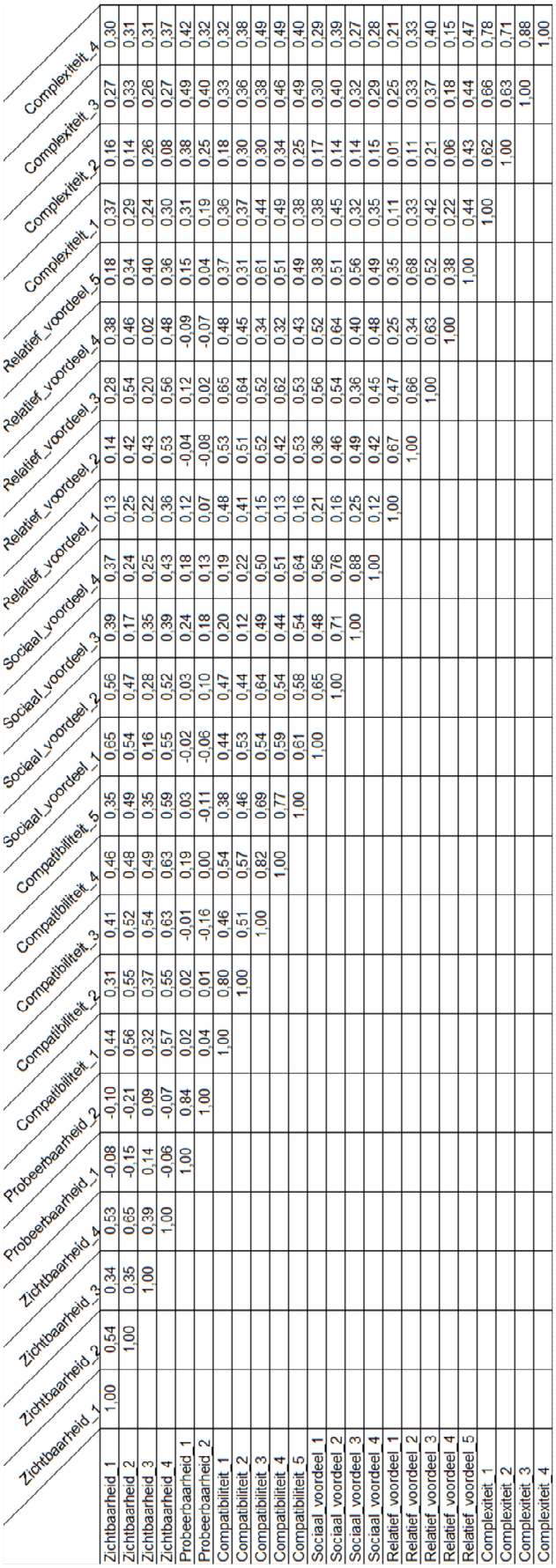
Ik heb behoefte aan aandacht voor andere leefstijladviezen



Ik heb behoefte aan andere bestedingsmogelijkheden voor mijn Beweegpunten



Appendix V: correlation matrix



	Zichtbaarheid_1	Zichtbaarheid_2	Zichtbaarheid_3	Zichtbaarheid_4	Probeerbaarheid_1	Probeerbaarheid_2	Compatibiliteit_1	Compatibiliteit_2	Compatibiliteit_3	Compatibiliteit_4	Compatibiliteit_5	Sociaal_voordeel_1	Sociaal_voordeel_2	Sociaal_voordeel_3	Sociaal_voordeel_4	Relatief_voordeel_1	Relatief_voordeel_2	Relatief_voordeel_3	Relatief_voordeel_4	Relatief_voordeel_5	Complexiteit_1	Complexiteit_2	Complexiteit_3	Complexiteit_4
Zichtbaarheid_1	1,00	0,54	0,34	0,53	-0,08	-0,10	0,44	0,31	0,41	0,46	0,35	0,65	0,56	0,39	0,37	0,13	0,14	0,28	0,38	0,18	0,37	0,16	0,27	0,30
Zichtbaarheid_2		1,00	0,35	0,65	-0,15	-0,21	0,56	0,55	0,52	0,48	0,49	0,54	0,47	0,17	0,24	0,25	0,42	0,54	0,46	0,34	0,29	0,14	0,33	0,31
Zichtbaarheid_3			1,00	0,39	0,14	0,09	0,32	0,37	0,54	0,49	0,35	0,16	0,28	0,35	0,25	0,22	0,43	0,20	0,02	0,40	0,24	0,26	0,26	0,31
Zichtbaarheid_4				1,00	-0,06	-0,07	0,57	0,55	0,63	0,63	0,59	0,55	0,52	0,39	0,43	0,36	0,53	0,56	0,48	0,36	0,30	0,08	0,27	0,37
Probeerbaarheid_1					1,00	0,84	0,02	0,02	-0,01	0,19	0,03	-0,02	0,03	0,24	0,18	0,12	-0,04	0,12	-0,09	0,15	0,31	0,38	0,49	0,42
Probeerbaarheid_2						1,00	0,04	0,01	-0,16	0,00	-0,11	-0,06	0,10	0,18	0,13	0,07	-0,08	0,02	-0,07	0,04	0,19	0,25	0,40	0,32
Compatibiliteit_1							1,00	0,80	0,46	0,54	0,38	0,44	0,47	0,20	0,19	0,48	0,53	0,65	0,48	0,37	0,36	0,18	0,33	0,32
Compatibiliteit_2								1,00	0,51	0,57	0,46	0,53	0,44	0,12	0,22	0,41	0,51	0,64	0,45	0,31	0,37	0,30	0,36	0,38
Compatibiliteit_3									1,00	0,82	0,69	0,54	0,64	0,49	0,50	0,15	0,52	0,52	0,34	0,61	0,44	0,30	0,38	0,49
Compatibiliteit_4										1,00	0,77	0,59	0,54	0,44	0,51	0,13	0,42	0,62	0,32	0,51	0,49	0,34	0,46	0,49
Compatibiliteit_5											1,00	0,61	0,58	0,54	0,64	0,16	0,53	0,53	0,43	0,49	0,38	0,25	0,49	0,40
Sociaal voordeel_1												1,00	0,65	0,48	0,56	0,21	0,36	0,56	0,52	0,38	0,38	0,17	0,30	0,29
Sociaal voordeel_2													1,00	0,71	0,76	0,16	0,46	0,54	0,64	0,51	0,45	0,14	0,40	0,39
Sociaal voordeel_3														1,00	0,88	0,25	0,49	0,36	0,40	0,56	0,32	0,14	0,32	0,27
Sociaal voordeel_4															1,00	0,12	0,42	0,45	0,48	0,49	0,35	0,15	0,29	0,28
Relatief voordeel_1																1,00	0,67	0,47	0,25	0,35	0,11	0,01	0,25	0,21
Relatief voordeel_2																	1,00	0,66	0,34	0,68	0,33	0,11	0,33	0,33
Relatief voordeel_3																		1,00	0,63	0,52	0,42	0,21	0,37	0,40
Relatief voordeel_4																			1,00	0,38	0,22	0,06	0,18	0,15
Relatief voordeel_5																				1,00	0,44	0,43	0,44	0,47
Complexiteit_1																					1,00	0,62	0,66	0,78
Complexiteit_2																						1,00	0,63	0,71
Complexiteit_3																							1,00	0,88
Complexiteit_4																								1,00

	Zichtbaarheid_1	Zichtbaarheid_2	Zichtbaarheid_3	Zichtbaarheid_4	Probeerbaarheid_1	Probeerbaarheid_2	Compatibiliteit_1	Compatibiliteit_2	Compatibiliteit_3	Compatibiliteit_4	Compatibiliteit_5	Sociaal_voordeel_1	Sociaal_voordeel_2	Sociaal_voordeel_3	Sociaal_voordeel_4	Relatief_voordeel_1	Relatief_voordeel_2	Relatief_voordeel_3	Relatief_voordeel_4	Relatief_voordeel_5	Complexiteit_1	Complexiteit_2	Complexiteit_3	Complexiteit_4
Zichtbaarheid_1	1,00	0,54	0,34	0,53	-0,08	-0,10	0,44	0,31	0,41	0,46	0,35	0,65	0,56	0,39	0,37	0,13	0,14	0,28	0,38	0,18	0,37	0,16	0,27	0,30
Zichtbaarheid_2	0,54	1,00	0,35	0,65	-0,15	-0,21	0,56	0,55	0,52	0,48	0,49	0,54	0,47	0,17	0,24	0,25	0,42	0,54	0,46	0,34	0,29	0,14	0,33	0,31
Zichtbaarheid_3	0,34	0,35	1,00	0,39	0,14	0,09	0,32	0,37	0,54	0,49	0,35	0,16	0,28	0,35	0,25	0,22	0,43	0,20	0,02	0,40	0,24	0,26	0,26	0,31
Zichtbaarheid_4	0,53	0,65	0,39	1,00	-0,06	-0,07	0,57	0,55	0,63	0,63	0,59	0,55	0,52	0,39	0,43	0,36	0,53	0,56	0,48	0,36	0,30	0,08	0,27	0,37
Probeerbaarheid_1	-0,08	-0,15	0,14	-0,06	1,00	0,84	0,02	0,02	-0,01	0,19	0,03	-0,02	0,03	0,24	0,18	0,12	-0,04	0,12	-0,09	0,15	0,31	0,38	0,49	0,42
Probeerbaarheid_2	-0,10	-0,21	0,09	-0,07	0,84	1,00	0,04	0,01	-0,16	0,00	-0,11	-0,06	0,10	0,18	0,13	0,07	-0,08	0,02	-0,07	0,04	0,19	0,25	0,40	0,32
Compatibiliteit_1	0,44	0,56	0,32	0,57	0,02	0,04	1,00	0,80	0,46	0,54	0,38	0,44	0,47	0,20	0,19	0,48	0,53	0,65	0,48	0,37	0,36	0,18	0,33	0,32
Compatibiliteit_2	0,31	0,55	0,37	0,55	0,02	0,01	0,80	1,00	0,51	0,57	0,46	0,53	0,44	0,12	0,22	0,41	0,51	0,64	0,45	0,31	0,37	0,30	0,36	0,38
Compatibiliteit_3	0,41	0,52	0,54	0,63	-0,01	-0,16	0,46	0,51	1,00	0,82	0,69	0,54	0,64	0,49	0,50	0,15	0,52	0,52	0,34	0,61	0,44	0,30	0,38	0,49
Compatibiliteit_4	0,46	0,48	0,49	0,63	0,19	0,00	0,54	0,57	0,82	1,00	0,77	0,59	0,54	0,44	0,51	0,13	0,42	0,62	0,32	0,51	0,49	0,34	0,46	0,49
Compatibiliteit_5	0,35	0,49	0,35	0,59	0,03	-0,11	0,38	0,46	0,69	0,77	1,00	0,61	0,58	0,54	0,64	0,16	0,53	0,53	0,43	0,49	0,38	0,25	0,49	0,40
Sociaal_voordeel_1	0,65	0,54	0,16	0,55	-0,02	-0,06	0,44	0,53	0,54	0,59	0,61	1,00	0,65	0,48	0,56	0,21	0,36	0,56	0,52	0,38	0,38	0,17	0,30	0,29
Sociaal_voordeel_2	0,56	0,47	0,28	0,52	0,03	0,10	0,47	0,44	0,64	0,54	0,58	0,65	1,00	0,71	0,76	0,16	0,46	0,54	0,64	0,51	0,45	0,14	0,40	0,39
Sociaal_voordeel_3	0,39	0,17	0,35	0,39	0,24	0,18	0,20	0,12	0,49	0,44	0,54	0,48	0,71	1,00	0,88	0,25	0,49	0,36	0,40	0,56	0,32	0,14	0,32	0,27
Sociaal_voordeel_4	0,37	0,24	0,25	0,43	0,18	0,13	0,19	0,22	0,50	0,51	0,64	0,56	0,76	0,88	1,00	0,12	0,42	0,45	0,48	0,49	0,35	0,15	0,29	0,28
Relatief_voordeel_1	0,13	0,25	0,22	0,36	0,12	0,07	0,48	0,41	0,15	0,13	0,16	0,21	0,16	0,25	0,12	1,00	0,67	0,47	0,25	0,35	0,11	0,01	0,25	0,21
Relatief_voordeel_2	0,14	0,42	0,43	0,53	-0,04	-0,08	0,53	0,51	0,52	0,42	0,53	0,36	0,46	0,49	0,42	0,67	1,00	0,66	0,34	0,68	0,33	0,11	0,33	0,33
Relatief_voordeel_3	0,28	0,54	0,20	0,56	0,12	0,02	0,65	0,64	0,52	0,62	0,53	0,56	0,54	0,36	0,45	0,47	0,66	1,00	0,63	0,52	0,42	0,21	0,37	0,40
Relatief_voordeel_4	0,38	0,46	0,02	0,48	-0,09	-0,07	0,48	0,45	0,34	0,32	0,43	0,52	0,64	0,40	0,48	0,25	0,34	0,63	1,00	0,38	0,22	0,06	0,18	0,15
Relatief_voordeel_5	0,18	0,34	0,40	0,36	0,15	0,04	0,37	0,31	0,61	0,51	0,49	0,38	0,51	0,56	0,49	0,35	0,68	0,52	0,38	1,00	0,44	0,43	0,44	0,47
Complexiteit_1	0,37	0,29	0,24	0,30	0,31	0,19	0,36	0,37	0,44	0,49	0,38	0,38	0,45	0,32	0,35	0,11	0,33	0,42	0,22	0,44	1,00	0,62	0,66	0,78
Complexiteit_2	0,16	0,14	0,26	0,08	0,38	0,25	0,18	0,30	0,30	0,34	0,25	0,17	0,14	0,14	0,15	0,01	0,11	0,21	0,06	0,43	0,62	1,00	0,63	0,71
Complexiteit_3	0,27	0,33	0,26	0,27	0,49	0,40	0,33	0,36	0,38	0,46	0,49	0,30	0,40	0,32	0,29	0,25	0,33	0,37	0,18	0,44	0,66	0,63	1,00	0,88
Complexiteit_4	0,30	0,31	0,31	0,37	0,42	0,32	0,32	0,38	0,49	0,49	0,40	0,29	0,39	0,27	0,28	0,21	0,33	0,40	0,15	0,47	0,78	0,71	0,88	1,00

Appendix VI: Results of factor analyses

Unrotated Factor Loading and Communalities							
40 cases used 18 cases contain missing values							
Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Communality
Zichtbaarheid_1	0,618	-0,325	0,126	0,353	-0,298	-0,13	0,733
Zichtbaarheid_2	0,705	-0,382	0,331	0,147	-0,071	0,026	0,779
Zichtbaarheid_3	0,533	0,064	0,028	0,36	0,51	0,261	0,747
Zichtbaarheid_4	0,724	-0,295	0,2	0,054	0	0,219	0,702
Probeerbaarheid_1	0,259	0,822	-0,113	-0,18	-0,116	0,301	0,891
Probeerbaarheid_2	0,143	0,762	-0,013	-0,312	-0,234	0,345	0,872
Compatibiliteit_1	0,701	0,022	0,546	-0,101	-0,044	0,019	0,803
Compatibiliteit_2	0,697	0,067	0,491	-0,025	-0,008	0,231	0,786
Compatibiliteit_3	0,795	-0,157	-0,154	0,31	0,217	0,131	0,842
Compatibiliteit_4	0,807	-0,008	-0,109	0,321	0	0,267	0,838
Compatibiliteit_5	0,765	-0,233	-0,197	0,118	-0,02	0,164	0,719
Sociaal_Voordeel_1	0,707	-0,298	-0,04	0,003	-0,293	0,018	0,677
Sociaal_Voordeel_2	0,789	-0,245	-0,241	-0,152	-0,2	-0,05	0,805
Sociaal_Voordeel_3	0,67	-0,043	-0,597	-0,245	0,077	0,005	0,873
Sociaal_Voordeel_4	0,678	-0,106	-0,624	-0,203	-0,09	0,08	0,915
Relatief_Voordeel_1	0,462	0,148	0,408	-0,529	0,267	-0,176	0,784
Relatief_Voordeel_2	0,722	-0,102	0,067	-0,388	0,486	-0,042	0,925
Relatief_Voordeel_3	0,805	-0,029	0,119	-0,357	-0,061	0,004	0,795
Relatief_Voordeel_4	0,561	-0,365	0,041	-0,423	-0,309	-0,127	0,741
Relatief_Voordeel_5	0,7	0,101	-0,24	-0,108	0,358	-0,299	0,787
Complexiteit_1	0,713	0,356	-0,093	0,197	-0,076	-0,309	0,784
Complexiteit_2	0,487	0,567	-0,025	0,355	0,023	-0,252	0,75
Complexiteit_3	0,731	0,49	0,103	0,121	-0,187	-0,155	0,859
Complexiteit_4	0,724	0,49	0,073	0,239	-0,062	-0,231	0,884
Variance	10,645	2,948	1,868	1,741	1,192	0,897	19,291
% Var	0,444	0,123	0,078	0,073	0,05	0,037	0,804

Varimax rotation							
Variable	Zichtbaarheid	Sociaal voordeel	Simpliciteit	Relatief voordeel	Probeerbaarheid	Compatibiliteit	Communality
Zichtbaarheid_1	0,702	-0,198	-0,329	0,105	-0,279	0,057	0,733
Zichtbaarheid_2	0,777	-0,141	-0,143	-0,211	-0,215	0,208	0,779
Zichtbaarheid_3	0,179	-0,099	-0,236	-0,149	-0,001	0,792	0,747
Zichtbaarheid_4	0,695	-0,256	-0,05	-0,216	-0,029	0,322	0,702
Probeerbaarheid_1	-0,115	-0,103	-0,345	-0,07	0,859	0,078	0,891
Probeerbaarheid_2	-0,067	-0,024	-0,189	-0,086	0,904	-0,08	0,872
Compatibiliteit_1	0,675	0,041	-0,264	-0,497	0,133	0,106	0,803
Compatibiliteit_2	0,672	0,036	-0,2	-0,393	0,254	0,271	0,786
Compatibiliteit_3	0,431	-0,453	-0,301	-0,066	-0,116	0,584	0,842
Compatibiliteit_4	0,535	-0,399	-0,337	0,051	0,122	0,511	0,838
Compatibiliteit_5	0,513	-0,556	-0,167	-0,031	-0,029	0,342	0,719
Sociaal_Voordeel_1	0,654	-0,468	-0,157	-0,048	-0,058	0,007	0,677
Sociaal_Voordeel_2	0,508	-0,697	-0,19	-0,156	-0,028	0	0,805
Sociaal_Voordeel_3	0,068	-0,883	-0,164	-0,165	0,09	0,161	0,873
Sociaal_Voordeel_4	0,183	-0,917	-0,122	-0,025	0,12	0,105	0,915
Relatief_Voordeel_1	0,176	-0,031	-0,136	-0,845	0,138	-0,032	0,784
Relatief_Voordeel_2	0,216	-0,427	-0,081	-0,76	-0,036	0,334	0,925
Relatief_Voordeel_3	0,527	-0,433	-0,188	-0,511	0,183	0,018	0,795
Relatief_Voordeel_4	0,548	-0,473	0,042	-0,331	-0,065	-0,317	0,741
Relatief_Voordeel_5	0,015	-0,538	-0,459	-0,456	-0,1	0,261	0,787
Complexiteit_1	0,23	-0,31	-0,774	-0,128	0,092	0,099	0,784
Complexiteit_2	0,037	-0,046	-0,821	-0,028	0,175	0,203	0,75
Complexiteit_3	0,359	-0,166	-0,748	-0,18	0,328	0,062	0,859
Complexiteit_4	0,281	-0,144	-0,827	-0,169	0,214	0,163	0,884
Variance	4,9158	4,1779	3,5753	2,5488	2,078	1,995	19,2907
% Var	0,205	0,174	0,149	0,106	0,087	0,083	0,804

Factor Score Coefficients						
Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
Zichtbaarheid_1	0,215	0,045	-0,147	0,177	-0,154	-0,138
Zichtbaarheid_2	0,217	0,099	0,022	0,003	-0,079	0,02
Zichtbaarheid_3	-0,072	0,078	0,074	-0,032	0,012	0,544
Zichtbaarheid_4	0,19	0,04	0,15	0,019	0,069	0,146
Probeerbaarheid_1	-0,012	-0,033	0,053	0,065	0,45	0,065
Probeerbaarheid_2	0,062	-0,017	0,121	0,06	0,513	-0,019
Compatibiliteit_1	0,187	0,177	0,003	-0,157	0,051	-0,036
Compatibiliteit_2	0,215	0,174	0,109	-0,075	0,178	0,121
Compatibiliteit_3	0	-0,049	0,017	0,072	-0,049	0,302
Compatibiliteit_4	0,112	-0,026	0,056	0,19	0,12	0,255
Compatibiliteit_5	0,083	-0,114	0,084	0,121	0,041	0,133
Sociaal_Voordeel_1	0,186	-0,084	0,019	0,12	0,011	-0,139
Sociaal_Voordeel_2	0,068	-0,191	0,005	0,047	-0,012	-0,156
Sociaal_Voordeel_3	-0,154	-0,322	0,045	-0,009	0,026	0,016
Sociaal_Voordeel_4	-0,065	-0,337	0,081	0,103	0,088	-0,028
Relatief_Voordeel_1	-0,079	0,078	-0,009	-0,462	-0,039	-0,079
Relatief_Voordeel_2	-0,156	-0,059	0,09	-0,391	-0,082	0,171
Relatief_Voordeel_3	0,076	-0,055	0,058	-0,156	0,08	-0,109
Relatief_Voordeel_4	0,143	-0,123	0,049	-0,082	-0,02	-0,346
Relatief_Voordeel_5	-0,258	-0,133	-0,185	-0,24	-0,223	0,04
Complexiteit_1	-0,067	-0,022	-0,341	0,012	-0,129	-0,137
Complexiteit_2	-0,101	0,065	-0,369	0,032	-0,094	-0,015
Complexiteit_3	0,043	0,053	-0,261	0,025	0,04	-0,141
Complexiteit_4	-0,024	0,066	-0,328	0,003	-0,057	-0,079

Appendix VII: results of reliability analyses

Item Analysis of Zichtbaarheid_1; Zichtbaarheid_2; Zichtbaarheid_3; Zichtbaarheid_4

```
* NOTE * 48 cases used, 10 cases contain missing values


Correlation Matrix

                 Zichtbaarheid_1  Zichtbaarheid_2  Zichtbaarheid_3
Zichtbaarheid_2            0,550
Zichtbaarheid_3            0,336           0,356
Zichtbaarheid_4            0,531           0,648            0,387

Cell Contents: Pearson correlation


Item and Total Statistics

                 Total
Variable         Count    Mean  StDev
Zichtbaarheid_1     48   2,875  1,265
Zichtbaarheid_2     48   2,958  1,368
Zichtbaarheid_3     48   2,604  1,233
Zichtbaarheid_4     48   3,583  1,252
Total               48  12,021  3,976


Cronbach's alpha = 0,7800


Omitted Item Statistics

                   Adj.   Adj.               Squared
                  Total  Total   Item-Adj.  Multiple  Cronbach's
Omitted Variable   Mean  StDev  Total Corr      Corr       Alpha
Zichtbaarheid_1   9,146  3,094      0,5917    0,3653      0,7231
Zichtbaarheid_2   9,063  2,935      0,6633    0,4849      0,6833
Zichtbaarheid_3   9,417  3,293      0,4239    0,1822      0,8030
Zichtbaarheid_4   8,438  3,024      0,6730    0,4810      0,6811
```

Item Analysis of Probeerbaarheid_1; Probeerbaarheid_2

```
* NOTE * 48 cases used, 10 cases contain missing values
* NOTE * Calculating omitted item statistics requires more than 2 variables.


Correlation Matrix

Pearson correlation of Probeerbaarheid_1 and Probeerbaarheid_2 = 0,839


Item and Total Statistics

                  Total
Variable          Count    Mean   StDev
Probeerbaarheid_1    48  2,4375  1,1091
Probeerbaarheid_2    48  2,3750  1,1228
Total                48  4,8125  2,1404


Cronbach's alpha = 0,9126
```

Item Analysis of Compatibilit; Compatibilit; Compatibilit; Compatibilit; Compatibilit

```
* NOTE * 47 cases used, 11 cases contain missing values


Correlation Matrix

                  Compatibiliteit_  Compatibiliteit_  Compatibiliteit_
Compatibiliteit_
Compatibiliteit_             0,796
Compatibiliteit_             0,459             0,510
Compatibiliteit_             0,531             0,567             0,816
Compatibiliteit_             0,371             0,452             0,694
0,760

Cell Contents: Pearson correlation


Item and Total Statistics

                   Total
Variable           Count    Mean  StDev
Compatibiliteit_1     47   3,170  1,148
Compatibiliteit_2     47   3,149  1,161
Compatibiliteit_3     47   3,489  1,159
Compatibiliteit_4     47   3,404  1,097
Compatibiliteit_5     47   2,681  1,253
Total                 47  15,894  4,779


Cronbach's alpha = 0,8789


Omitted Item Statistics

                        Adj.               Squared
                 Adj. Total  Total   Item-Adj.  Multiple  Cronbach's
Omitted Variable       Mean  StDev  Total Corr      Corr       Alpha
Compatibiliteit_1    12,723  3,971      0,6304    0,6491      0,8716
Compatibiliteit_2    12,745  3,904      0,6900    0,6690      0,8579
Compatibiliteit_3    12,404  3,849      0,7494    0,6818      0,8438
Compatibiliteit_4    12,489  3,833      0,8260    0,7636      0,8271
Compatibiliteit_5    13,213  3,844      0,6733    0,6006      0,8633
```

Item Analysis of Sociaal_Voordeel; Sociaal_Voordeel; Sociaal_Voordeel; Sociaal_Voordeel

```
* NOTE * 46 cases used, 12 cases contain missing values


Correlation Matrix

                  Sociaal_Voordeel  Sociaal_Voordeel  Sociaal_Voordeel
Sociaal_Voordeel             0,639
Sociaal_Voordeel             0,487             0,717
Sociaal_Voordeel             0,558             0,757             0,885

Cell Contents: Pearson correlation


Item and Total Statistics

                   Total
Variable           Count    Mean  StDev
```

Sociaal_Voordeel_1	46	3,043	1,210
Sociaal_Voordeel_2	46	2,543	1,089
Sociaal_Voordeel_3	46	2,565	1,276
Sociaal_Voordeel_4	46	2,609	1,341
Total	46	10,761	4,280

Cronbach's alpha = 0,8908

Omitted Item Statistics

Omitted Variable	Adj. Total Mean	Adj. Total StDev	Item-Adj. Total Corr	Squared Multiple Corr	Cronbach's Alpha
Sociaal_Voordeel_1	7,717	3,443	0,6004	0,4258	0,9159
Sociaal_Voordeel_2	8,217	3,353	0,8065	0,6523	0,8471
Sociaal_Voordeel_3	8,196	3,188	0,8025	0,7900	0,8430
Sociaal_Voordeel_4	8,152	3,077	0,8548	0,8190	0,8216

Item Analysis of Relatief_Voo; Relatief_Voo; Relatief_Voo; Relatief_Voo; Relatief_Voo

* NOTE * 47 cases used, 11 cases contain missing values

Correlation Matrix

	Relatief_Voordee	Relatief_Voordee	Relatief_Voordee	
Relatief_Voordee				
Relatief_Voordee	0,671			
Relatief_Voordee	0,474	0,657		
Relatief_Voordee	0,252	0,336	0,631	
Relatief_Voordee	0,361	0,676	0,538	0,367

Cell Contents: Pearson correlation

Item and Total Statistics

Variable	Total Count	Mean	StDev
Relatief_Voordeel_1	47	2,894	0,938
Relatief_Voordeel_2	47	2,830	1,007
Relatief_Voordeel_3	47	3,298	1,196
Relatief_Voordeel_4	47	3,106	1,339
Relatief_Voordeel_5	47	2,936	0,942
Total	47	15,064	4,188

Cronbach's alpha = 0,8221

Omitted Item Statistics

Omitted Variable	Adj. Total Mean	Adj. Total StDev	Item-Adj. Total Corr	Squared Multiple Corr	Cronbach's Alpha
Relatief_Voordeel_1	12,170	3,613	0,5314	0,4708	0,8100
Relatief_Voordeel_2	12,234	3,389	0,7381	0,7134	0,7541
Relatief_Voordeel_3	11,766	3,198	0,7687	0,6242	0,7370
Relatief_Voordeel_4	11,957	3,355	0,4994	0,4195	0,8346
Relatief_Voordeel_5	12,128	3,549	0,6074	0,4989	0,7915

Item Analysis of Complexiteit_1; Complexiteit_2; Complexiteit_3; Complexiteit_4

* NOTE * 48 cases used, 10 cases contain missing values

Correlation Matrix

	Complexiteit_1	Complexiteit_2	Complexiteit_3
Complexiteit_2	0,620		
Complexiteit_3	0,684	0,636	
Complexiteit_4	0,781	0,708	0,877

Cell Contents: Pearson correlation

Item and Total Statistics

Variable	Total Count	Mean	StDev
Complexiteit_1	48	3,938	0,998
Complexiteit_2	48	3,708	1,071
Complexiteit_3	48	3,813	1,104
Complexiteit_4	48	4,000	1,011
Total	48	15,458	3,713

Cronbach’s alpha = 0,9093

Omitted Item Statistics

Omitted Variable	Adj. Total Mean	Adj. Total StDev	Item-Adj. Total Corr	Squared Multiple Corr	Cronbach’s Alpha
Complexiteit_1	11,521	2,895	0,7626	0,6183	0,8938
Complexiteit_2	11,750	2,877	0,7078	0,5134	0,9134
Complexiteit_3	11,646	2,756	0,8167	0,7697	0,8751
Complexiteit_4	11,458	2,775	0,9029	0,8447	0,8450

Appendix VIII: regression analyses for launch strategy

Regression Analysis: Gebruik_Jaar versus Zichtbaarhei; Probeerbaarh; Compatibilit; ...

Method

Categorical predictor coding (1; 0)
Rows unused 11

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	7	30,551	4,36438	2,44	0,035
Zichtbaarheid_Score	1	3,527	3,52680	1,97	0,168
Probeerbaarheid_Score	1	3,036	3,03621	1,70	0,200
Compatibiliteit_Score	1	0,023	0,02258	0,01	0,911
Sociaal_Voordeel_Score	1	3,899	3,89943	2,18	0,148
Relatief_Voordeel_Score	1	9,659	9,65916	5,41	0,025
Simpliciteit_score	1	0,064	0,06395	0,04	0,851
Intro_strategy	1	1,734	1,73434	0,97	0,331
Error	39	69,662	1,78621		
Total	46	100,213			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1,33649	30,49%	18,01%	0,00%

Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-0,417	0,972	-0,43	0,670	
Zichtbaarheid_Score	0,432	0,307	1,41	0,168	2,47
Probeerbaarheid_Score	0,279	0,214	1,30	0,200	1,37
Compatibiliteit_Score	0,048	0,430	0,11	0,911	4,25
Sociaal_Voordeel_Score	-0,408	0,276	-1,48	0,148	2,12
Relatief_Voordeel_Score	0,849	0,365	2,33	0,025	2,41
Simpliciteit_score	-0,053	0,279	-0,19	0,851	1,77
Intro_strategy					
1	-0,447	0,454	-0,99	0,331	1,35

Regression Equation

Intro_strategy
0 Gebruik_Jaar = -0,417 + 0,432 Zichtbaarheid_Score
+ 0,279 Probeerbaarheid_Score
+ 0,048 Compatibiliteit_Score
- 0,408 Sociaal_Voordeel_Score
+ 0,849 Relatief_Voordeel_Score
- 0,053 Simpliciteit_score

1 Gebruik_Jaar = -0,86 + 0,432 Zichtbaarheid_Score
+ 0,279 Probeerbaarheid_Score
+ 0,048 Compatibiliteit_Score
- 0,408 Sociaal_Voordeel_Score
+ 0,849 Relatief_Voordeel_Score
- 0,053 Simpliciteit_score

Fits and Diagnostics for Unusual Observations

Obs	Gebruik_Jaar	Fit	Resid	Std Resid	
1	5,000	2,008	2,992	2,79	R
5	4,000	1,656	2,344	2,10	R
19	1,000	3,726	-2,726	-2,21	R

R Large residual

Residual Plots for Gebruik_Jaar

Regression Analysis: Lengte_Gebru versus Zichtbaarhei; Probeerbaarh; Compatibilit; ...

Method

Categorical predictor coding	(1; 0)
Rows unused	11

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Regression	7	4,3538	0,62197	1,08	0,396
Zichtbaarheid_Score	1	0,0192	0,01923	0,03	0,856
Probeerbaarheid_Score	1	0,1638	0,16384	0,28	0,597
Compatibiliteit_Score	1	0,1059	0,10589	0,18	0,671
Sociaal_Voordeel_Score	1	0,0458	0,04581	0,08	0,780
Relatief_Voordeel_Score	1	1,0663	1,06633	1,85	0,182
Simpliciteit_score	1	0,0032	0,00316	0,01	0,941
Intro_strategy	1	0,2458	0,24580	0,43	0,518
Error	39	22,4973	0,57685		
Total	46	26,8511			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0,759509	16,21%	1,18%	0,00%

Coefficients

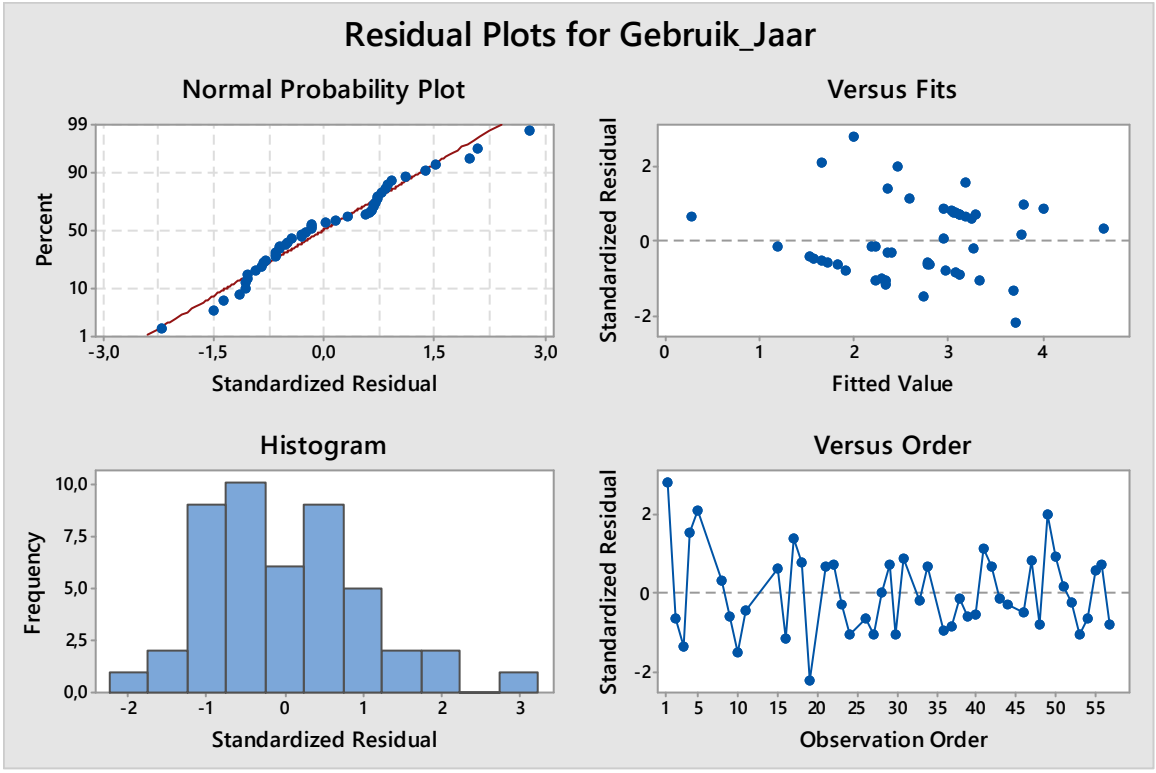
Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	0,376	0,552	0,68	0,500	
Zichtbaarheid_Score	0,032	0,175	0,18	0,856	2,47
Probeerbaarheid_Score	0,065	0,122	0,53	0,597	1,37
Compatibiliteit_Score	0,105	0,244	0,43	0,671	4,25
Sociaal_Voordeel_Score	-0,044	0,157	-0,28	0,780	2,12
Relatief_Voordeel_Score	0,282	0,207	1,36	0,182	2,41
Simpliciteit_score	0,012	0,159	0,07	0,941	1,77
Intro_strategy					
1	-0,168	0,258	-0,65	0,518	1,35

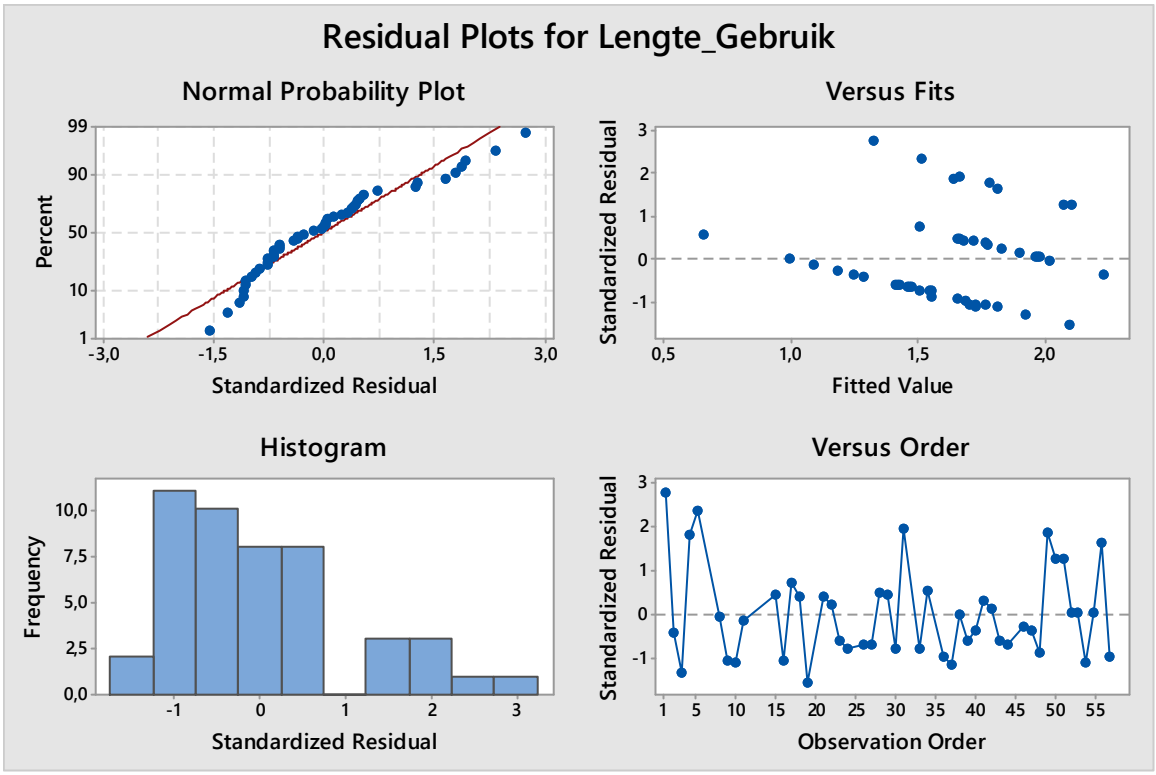
Regression Equation

Intro_strategy
0 Lengte_Gebruik = 0,376 + 0,032 Zichtbaarheid_Score
+ 0,065 Probeerbaarheid_Score
+ 0,105 Compatibiliteit_Score
- 0,044 Sociaal_Voordeel_Score
+ 0,282 Relatief_Voordeel_Score
+ 0,012 Simpliciteit_score

```
1               Lengte_Gebruik = 0,208 + 0,032 Zichtbaarheid_Score
                                 + 0,065 Probeerbaarheid_Score
+ 0,105 Compatibiliteit_Score
                                 - 0,044 Sociaal_Voordeel_Score
                                 + 0,282 Relatief_Voordeel_Score
+ 0,012 Simpliciteit_score


Fits and Diagnostics for Unusual Observations

                                          Std
Obs  Lengte_Gebruik     Fit   Resid   Resid
  1           3,000   1,325   1,675    2,75  R
  5           3,000   1,512   1,488    2,34  R

R  Large residual
```

Residual Plots for Lengte_Gebruik




Residual Plots for Lengte_Gebruik
Normal Probability Plot
Percent
99
90
50
10
1
-3,0
-1,5
0,0
1,5
3,0
Standardized Residual
Versus Fits
Standardized Residual
3
2
1
0
-1
0,5
1,0
1,5
2,0
Fitted Value
Histogram
Frequency
10,0
7,5
5,0
2,5
0,0
-1
0
1
2
3
Standardized Residual
Versus Order
Standardized Residual
3
2
1
0
-1
1
5
10
15
20
25
30
35
40
45
50
55
Observation Order

Appendix IX: scatterplots Observable result and retention