Is moving as a child making the individual more innovative?

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ABSTRACT, This bachelor thesis studies whether innovative behavior can be explained by moving as a kid. The hypotheses tested are 'Individuals who moved in their childhood are scoring higher in innovative behavior than individuals who have not moved in their childhood' and 'The more positive people think of their moving as a kid, the higher they score on innovative behavior'. A sample group of 100 respondents did fill in a questionnaire, the results were analyzed using the 'One Sample T-test' and the general linear model. Results do not demonstrate evidence to accept the hypotheses. Based on this result, the conclusion of this thesis is that there is not a relation between moving as a kid and innovative behavior.

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Keywords
Innovative behavior, childhood experience, Innovation, Residential move, Individual innovation, Sample T-test, General Linear Model

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1. INTRODUCTION

Innovation is an essential process for companies nowadays. De Jong cites the book of Gregory Smith, 'The New Leader: Bringing Creativity and Innovation to the Workforce', saying 'firms need to continuously renew and improve their offerings to secure long-term survival, profitability and growth.' More and more companies regard innovation as the main source of gain or sustain competitive advantage, because by being innovative, businesses can adapt to the rapid economic changes in their field of business (Tushman & O'Reilly, 1996) (Hitt, Keats, & DeMarie, 1998).

Although the importance of innovation is clear, there is not one clear definition of innovation. There are many definitions, all slightly different. For example the definition defined by Buys (1984, p. 30): 'Innovation is an abrupt renewal, a combination of technology, product, process, market, organization, which has been successful by the standards of the manufacturer and of the stakeholders (successful on the 'market'). Evans (1967, pp. 15-16) stated the following about innovation: "First, there is the idea or item which is novel to a particular individual or group and, second, there is the change which results from the adoption of the object or idea." It is important to notice that innovation consists of two parts; an invention and the commercialization of the invention.

The process of innovation is foremost driven by people (Mansfeld, Hölzle, & Gemünden, 2010). They have to come up with an idea and promote the idea through the organizational stages of the innovation process (Achilladelis, Jervis, & Robertson, 1971). So, the success of an innovation can be credited most to the individuals driving the innovation along the process through the organization (Markham & Griffin, 1998). Despite the crucial role of individuals in innovation, there is relatively small number of studies covering the individual innovativeness (Bălău, Faems, & Van der Bij, 2012). Those studies identified several predictors of individual innovative behavior. Most of these predictors are contextual attributes and some studies found individual attributes which explained individual innovativeness. Since there has been done little research to individual innovation, there are likely more predictors of innovative behavior to be found. Therefore the goal of this thesis is to find alternative predictors of individual innovativeness

The person we become is largely determined during our childhood. Your personality is formed during this period and is created by both genetic influences (i.e. the personalities of your parents) as environmental factors (i.e. life experience and friends) (Instituut voor Bodymind Integration, 2013). So everything we go through as children affects who we will become as adults. Also children copy the behavior of other people and are easily suggestible by their parents and role models (Carpenter, Call, & Tomasello, 2005). When they are not learned to behave different, they will keep behaving in the way they copied. For example, children who are exposed to alcohol and smoking in their environment, are more likely to start drinking and smoking themselves. Also people who are abused by their parents during childhood, are more likely to abuse their own children. The reason for this is that this is the only way they knew to raise a kid. And Myers (1999) found that individuals who moved more often in their childhood, moved also more often as adults. So the period of childhood plays an important role in the rest of people's life. That means that it is also likely that the exposure to change during childhood, will have it is effect later on. Major changes during childhood could provide a perception of change, a big part of innovation. It is possible that people who have to deal with changes in their childhood, are used to change after a while and will deal more easily with change in the future. Another possibility is that people have a negative experience with change during their childhood and they will be afraid to change for the rest of their lives. There is no research done before linking childhood experience direct to innovative behavior as an adult. However, there are a few studies that did research the effect of childhood experience on adult creativity (Koestner, Walker, & Fichman, 1999) (Olszewski-Kubilius, 2000). So being exposed to a big change as a kid is a possible predictor of individual innovativeness. One of the biggest changes during childhood is moving to another town. When moving, you leave almost everything behind and have to start over.

Therefore the research question of this thesis is:

> "Can individual innovative behavior be explained by moving as a kid?"

As already mentioned before, innovation is very important to companies. To be able to innovate, companies need people who are innovative. There are no studies done before linking changes in your childhood to individual innovative behavior. So if there is a positive relation between innovative behavior and moving as a kid, it could possible help companies to find innovative people.

The next chapter explains the relevant theoretical concepts and also the hypotheses will be given in this chapter. Next, the chapter 'method' explains which variables are used and how the used data is collected. Also the hypothesis is analyzed statistically. Thereafter the chapter 'results' will show the results of the statistical analysis and finally in the chapter 'discussion' conclusions are drawn from the results and the limitations and possible further research of this thesis are discussed.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1 Innovative behavior

As already stated in the introduction, an innovation is an invention and the commercialization of the invention. So, it is a process with multiple stages. Hammond et al (2011) use a model of innovation (based on Farr, Sin & Tesluk (2003)), that contains two phases: the ideation phase and the implementation phase. The ideation phase consist of the identification and specification of the problem or opportunity and the idea or solution generation. The implementation phase consist of the evaluation of the idea or solution and the application or implementation of the chosen idea. Also Kanter (1988) uses a model with multiple stages. First, the problem recognition and the idea generation of solution to solve that problem. Next, the implementation of the idea. The implementation starts with finding of support for the idea and build a coalition of those supporters of the idea. And finally, during the last stage of this process, a prototype or model of the innovation will be made to 'complete' the idea. *"The idea becomes a reality; a prototype or model of the innovation is produced that can be touched or experienced, that can now be diffused, mass-produced, turned to productive use, or institutionalized."* (Kanter, 1988, p. 191).

One of the most important themes in discussion of innovation for companies is about the tension between exploitation and exploration (Benner & Tushman, 2003). A very important factor of success of the innovation process for companies is to balance these two activities (De Visser, 2013). Exploitation can be defined as *''the use and development of things already known''* (Levinthal & March, 1993, p. 105). Exploitation is

focused on short-term performance and on efficiency. It builds on existing knowledge, processes and products and results in incremental innovation. Therefore these activities are a pretty safe way to secure returns (Tidd & Bessant, 2009). Activities related to exploitation are for example refinement, increasing efficiency and implementation (Poppelaars, 2012). But exploitation activities do not ensure that companies will be able to respond well to environmental changes. Therefore firms need to do something different, they need more radical innovation than just building in existing knowledge resources (Leonard-Barton, 1992) (McGrath, 2001). To be able to do this, exploration activities are required. A definition of exploration is *"the pursuit of new knowledge of things that might come to be known"* (Levinthal & March, 1993, p. 105). Exploration activities are focused on the long-term innovation, on radical innovation and therefore high risk activities. These are more 'long jumps' (Rosenkopf & Nerkar, 2001). Activities related to exploration are for example experimenting, taking risks and searching for new knowledge (Poppelaars, 2012). Organizations that can manage the exploration activities well, will be better to adapt to changing circumstances in the environment (McGrath, 2001). When companies are focused too much on exploration activities, they are always looking for new opportunities, but they tend to forget to take rewards of their existing products (Volberda & Lewin, 2003). Therefore, it is necessary to find a balance between these two types of activities (Gupta, Smith, & Shalley, 2006). Resources of companies are limited, so companies have to make choices in respect to the allocation of resources. More resources allocated to exploitation imply fewer resources left over for exploration and the other way around (Gupta, Smith, & Shalley, 2006). 'Ambidexterity' is a metaphor often used in literature which indicates the optimal balance between exploration and exploitation (Poppelaars, 2012).

2.2 Identified influencers of innovative behavior

As already mentioned in the introduction, several predictors of individual innovative behavior are already identified. Bălău et al (2012) classified these individual characteristics related to individual innovative behavior into five main categories: personality, motivation, cognitive, affective and demographics.

In the category ''personality'' research has been done to the personality factors of the Big Five factor model, this is one of the most widely accepted models of personality. This model includes: "Neuroticism (i.e., tendency to experience negative affects, such as fear, sadness, embarrassment, anger, guilt, and disgust), Extraversion (i.e., tendency to like people, prefer being in large groups, and desire excitement and stimulation; likely to be assertive, active, talkative), Openness (i.e., tendency to have an active imagination, aesthetic sensitivity, intellectual curiosity, and be attentive to feelings), Agreeableness (i.e., tendency to be altruistic, cooperative, and trusting), and Conscientiousness (i.e., tendency to be purposeful, organized, reliable, determined, and ambitious)" (Major, Turner, & Fletcher, 2006, p. 928). Three of these five factors were found to influence individual innovative behavior, namely ''neuroticism'', ''openness'' and ''conscientiousness''. The other two factors, ''extraversion'' and ''agreeableness'', do not influence innovative behavior. All five factors do impact positively team innovation and four factors do influence organizational innovation (only agreeableness does not). Studies show that ''neuroticism'' and ''openness'' are positive related to innovative behavior (Zhou & George, 2001) (Hammond, Neff, Farr, Schwall, & Zhao, 2011). But consciousness is been found to have both a positive and a negative effect on innovative behavior (Zhou & George, 2001) (Miron, Erez, & Naveh, 2004) (Moon, Kamdar, Mayer, & Takeuchi, 2008). Seibert, Kraimer, & Crant (2001) found another personality characteristic related to individual behavior, namely pro-activeness. They found that individuals who score high on pro-activeness are always focused on finding ways to do things better, so there is a positive relation between these variables (Seibert, Kraimer, & Crant, 2001). Moon, Kamdar, Maye and Takeuchi (2008) also identified a personality characteristic influencing innovative behavior: the sense of duty. People with a high sense of duty will make more suggestions to make changes to improve the organizational performance , so sense of duty has also a positive influence on innovative behavior.

The next category according the classification of Bălău et al is ''motivation''. This category consist of two parts: intrinsic and extrinsic motivation. People who are intrinsic motivated will do something out of themselves, because they like it or think it's interesting etc. People who are extrinsic motivated do something because it leads to a certain outcome, like getting rewarded or punished (Ryan & Deci, 2000). Intrinsic motivation is linked to creativity, intrinsic motivated individuals are more creative. Creativity is positively linked to innovation behavior (Hammond, Neff, Farr, Schwall, & Zhao, 2011). So intrinsic motivation is positive related to innovative behavior. When people demonstrating innovative behavior are rewarded, the extrinsic motivated people will be more innovative. So both intrinsic and extrinsic motivation impacts positively innovative behavior.

The third category used by Bălău et al is ''cognitive''. Also in this category there are discovered a few indicators of individual innovative behavior. Taggar (2002) found that people scoring high on cognitive ability, perform better most of the time, are better able to process information and so more innovative. Scott and Bruce (1994) found a positive relation between intuitive problem-solving style and innovative behavior. The third cognitive characteristic is already mentioned before: creativity. So creativity impacts positively innovative behavior, because creative people generate more useful ideas (Amabile, 1983) and by doing so implement their ideas by research and development (Miron, Erez, & Naveh, 2004) (Hammond, Neff, Farr, Schwall, & Zhao, 2011)). According to Bălău et al (2012) Jing found in 2006 that knowledge conversion capability positively impacts innovative behavior. Next influencer of innovative behavior is self-leadership skills. Self-leadership skills enhances the effect of the organization environment factors in a positive way (Xiaojun & Peng, 2010).

''Affective'' is the fourth category. The study of Aryee, Walumbwa, Zhou and Hartnell (2012) shows a positive relationship between work engagement and innovative behavior. Employee commitment also impacts positively innovative behavior (Basu & Green, 1997). Besides these two variables, also humour plays a role in this category. Self-enhancing humour is positive related to innovative behavior, while aggressive humour has a negative influence (Ho, Wang, Huang, & Chen, 2011).

Finally, the last category is ''demographics''. In this category there are found three influencers of innovative behavior: age, tenure and education. Age is negative related to innovative behavior, because older people take less risks than younger people (Vroom & Pahl, 1971). Tenure has both a positive as negative impact on innovative behavior, while high education is linked to better cognitive abilities, which leads to a better score on innovative behavior (Papadakis & Bourantas, 1998) (Hammond, Neff, Farr, Schwall, & Zhao, 2011)

2.3 Hypotheses

For most children moving is a drastic change. Mostly they end up in a whole new environment. leaving their home, neighborhood, friends and school behind. So moving is likely to take them out of their comfort zone. Being out of your comfort zone is a stressful situation, but people will respond by overcoming their fear and will learn a lot and grow as an individual (Brown, 2008). When you are exposed to a moderate level of stress at a young age, you will learn handle stress better and you will benefit from it later on. The negative impact of stress is reduced (Shapero, Hamilton, Stange, Liu, Abramson, & Alloy, 2015). Innovation is also a source of stress, because it leads to change and uncertainty. When an individual cannot handle the stress well, could this lead to bad innovative performance (Cowan, Sanditov, & Weehuizen, 2011). Therefore individuals who have moved are better capable of dealing with stress and for that they are more innovative.

When you move to another environment, you have to deal with a lot of new stimuli. Knoll and Horton (2011) found that new external stimuli have a positive influence on idea generation for innovation. People exposed to new stimuli come up with more and better ideas. When someone is exposed at a young age to many new stimuli, it could have the same effect. When grown up, it is possible that he or she could generate more and better ideas. This due to events happened in childhood could impact behavior on later age.

The level of imagination of an individual depends on their experience (Vygotsky, 2004). When someone moved, he or she ends up in a new environment with all new relationships and stimuli. This leads to becoming more experienced, so people who moved do have a bigger imagination. Individuals scoring higher on imagination are more creative and also could generate more and better ideas, a part of innovation (Hammond, Neff, Farr, Schwall, & Zhao, 2011).

Koestner, Walker and Fichman (1999) found that parental conflicts during childhood are positive related to adult creativity. The reason for this is that children whose parents have a lot of conflicts are likely to receive inconsistent feedback from their parents about the value of their productions. So they have to judge this value by themselves. This ensures that these individuals are more innovative. Introvert children who moved have less relations with other people (Oishi & Schimmack, 2010), they are more on their own. This can cause the same effect, they might develop their own judgement of values.

Extravert children do not have problems to enter into new relationships (Oishi & Schimmack, 2010). Since they are forced to make new friends after moving, to meet new people etc., they will develop their social skills. One of the stages of the model of Kanter is to form a coalition with supporters of your idea. Individuals with better social skills will probably be better in forming a coalition and thus will be more innovative.

Hypothesis 1 [H1]: Individuals who moved in their childhood are scoring higher in innovative behavior than individuals who have not moved in their childhood.

Several studies found an positive relation between openness to experience and innovative behavior (Bălău, Faems, & Van der Bij, 2012). Hammond et al. (2011) stated that people scoring high on openness are less likely to shy away from new experiences and change, which are part of innovation. This could also be the case with people who moved as a kid, they are used to change and for that reason are less afraid to change. Myers (1999) found that individuals who moved as a child are more likely to move as adults. This indicates that these individuals are less afraid to change. Probably the feeling about the experience of change will play a role in this. When individuals thinks positive about moving as a child, they will not be afraid for changes as adults. When the experience is negative, they could be more afraid to change things.

Hypothesis [H2]: The more positive people think of their moving as a kid, the higher they score on innovative behavior.

3. METHOD

This chapter describes the methodology of this study. Firstly, the data collection is described (data and sample), followed by the independent variables, the dependent variables and control variables (measure) and finally the description of the statistical analysis.

3.1 Data and sample

In order to test the hypotheses, a questionnaire has been made by a team of four researchers. This questionnaire consisted of 33 question, not all of them are relevant for this thesis. The questionnaire is distributed to high-educated people aged 30 years or older. The reason to take high-educated people as research group is because in most companies high-educated people are in positions dealing with innovation. The reason to choose for people who are at least 30 years old is because the majority of people in this group do have an occupation. The questionnaire was sent by e-mail to people in the network of the four researchers. People who received the questionnaire were asked to spread the questionnaire. Also a link to the survey was placed on Facebook and LinkedIn. For these latter reasons, it is almost impossible to determine the response rate. The reason to do the data collection in this way, is because lead time was limited whilst minimal 100 respondents were needed. The goal to get minimal 100 respondents was set because it is considered to be a big enough sample of responses to deliver a valid outcome (de Veaux, Velleman, & Bock, 2005). At the end, the questionnaire was filled in by exactly 100 people. Out of these 100 respondents, some cases could not be included in the analysis. The reason for this is that some cases did not match the criteria of the sample group: being high-educated, older than 30 year and having a job. Besides that, one individual filled in the questionnaire twice, so also one of his entries has been removed. Also one person did not fill in the question about moving as a kid, which is critical to include a respondent in the analysis. At the end, 85 responses are included in the analysis; 67 men and 18 female with an average age of 43.

3.2 Measures

3.2.1 Independent variables: moved as kid and perception of moving as kid

The independent variable ‘’moved as a kid’’ is a dichotomous variable, so the variable has only two values: moved as a kid and did not move as a kid. A dichotomous variable is measured on the level of a nominal scale. The information is collected by the question ‘’ Please name all the places where you lived (place of residence) as a kid and at what age you started to live there? Please start at age 0’’. By asking this question, there is more information received than only whether the individual moved as a kid, yes or no. Also the number of times someone moved and at which ages is collected. The answer on this question is manual coded into the response database: moved as a kid, yes or no.

The second independent variable ‘’Perception of moving as a kid’’ is measured by asking the question: ‘’ If you look back at

the time(s) you moved as a kid, what is your feeling about it?''. This item is measured on a 5-point Likert scale ranging from ''very negative'' to ''very positive''. In literature there is a discussion going on whether it is possible to measure a Likert scale on interval level, in this thesis this method is applied.

3.2.2 Dependent variable: innovation behavior

In order to measure innovation behavior, the scale of Mom et al. (2009) is used. This scale consist of seven items to measure the exploration orientation and seven items to measure the exploitation orientation of managers. So, the scale makes a distinction between the two phases of innovation. All items are measured on a seven-point Likert scale ranging from "a very small extent" to "a very large extent" of engagement in explorative and exploitative activities in work related activities during last year. Because this model is focused on managers instead of high-educated people, the model is modified. Two questions in particularly are very focused on managers, for that reason these two are replaced with two questions from the article of Vermeulen et al (2003). Kaylar (2011) uses the questions of Vermeulen et al to measure innovative behavior. Both of the replaced questions were exploration items. This is not common practice, but due the limited time it was necessary to do it in this way. In appendix 1 all used questions are listed.

A factor analysis is performed to control if these 14 question can be split in two categories. Table 1 shows the result. Exploitation item 1 scored low in the component of exploitation, so this item is not measuring the same as the other exploitation questions. For that reason this item is left out of further analysis.

Table 1. Factor analysis for innovative behavior

	Component	
	1	2
Exploration item 1	,805	,052
Exploration item 2	,686	,012
Exploration item 3	,768	,052
Exploration item 4	,678	,077
Exploration item 5	,736	,086
Exploration item 6	,686	-,103
Exploration item 7	,745	-,108
Exploitation item 1	,501	,381
Exploitation item 2	-,122	,773
Exploitation item 3	,236	,584
Exploitation item 4	-,032	,756
Exploitation item 5	,065	,614
Exploitation item 6	,048	,805
Exploitation item 7	-,065	,727

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The reliability of the two scales is tested by Cronbach's Alpha: exploration scored 0,856 and exploitation 0,798. See table 2 and table 3. Since a score starting from 0.7 is being considered as reliable and scores higher than 0.8 are very good (de Veaux, Velleman, & Bock, 2005), the scale of exploration and exploitation is considered as reliable. By combining these two scales, a measure for innovative behavior is created. The mean score of the seven exploration items and the mean score of the six exploitation items are added together and divided by two. Applying the model of Mom is justified due that innovation is composed of both explorative and exploitative activities. Innovative behavior is measured by adding these two groups of activities.

Table 2. Reliability Statistics of exploration

Cronbach's Alpha	N of Items
,856	7

Table 3. Reliability Statistics of exploitation

Cronbach's Alpha	N of Items
,798	6

3.2.3 Control variables

Control variables are used to clarify the relationship between the independent and the dependent variable. These control variables are constant and unchanged throughout the analysis and might be the explanation for the dependent variable instead of the independent variable.

The experience of the employee is a possible variable that influence the individual innovativeness, more experienced people are expected to be better able to deal with a large diversity of ambiguous cues (Daft & Lengel, 1986, p. 555). To control the role of experience, tenure within the firm is included in this research which is expected to positively relate to managers' ambidexterity and innovative behavior (Tushman & O'Reilly, 1996, p. 27). The age of people affects the amount of risks they take (Vroom & Pahl, 1971). Older individuals are less likely to take risks than young individuals. As exploration is associated with risk-taking activities (March, 1996), the age of individuals is included to control this effect. Also the level of specialization of an individual is related to ambidexterity. This relationship is negative. To measure the role of specialization, tenure within the current function is included as a control variable (Birkinshaw & Gibson, 2004). The level of education is associated with cognitive abilities to process information (Papadakis & Bourantas, 1998),which is positively related to innovation behavior (Adler, Goldoftas, & Levine, 1999). Hammond et al (2011) found that education also influences innovative behavior. This relation is positive. Therefore the level of education is also included.

3.3 Statistical method

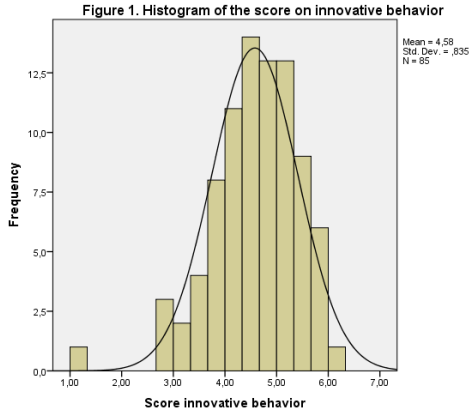
The data obtained via the questionnaire is transferred to SPSS, the used application to perform the analysis. First the usual descriptive statistics as minimum and maximum, mean and standard deviation are analyzed. Next, for both independent variables a general linear model is performed to look into the relationship between those variables and the score on innovative behavior, corrected with the control variable.

Because of the difference in sample (number of respondents) the analyses will be done separately. First, for both independent variables a basis model with dependent and control variables will be defined. Following this, in both models the independent variable (resp. “moved as a kid” and “feeling about moved as a kid”) will be added. In this way, the effects of the independent variables on the dependent variable are clear, just like the influence of the control variables. Also an ’One sample T-test’ is performed for the variable “moved as a kid”. The One sample T-test compares the means of two unrelated groups on the same continuous, dependent variable. Applying the One Sample T-test is justified when all of following conditions are met: independence of observation, the dependent variable is measured on a continuous scale, the independent variable should consist of two categorical and independent groups, no significant outliers, dependent variable normal distributed. In this case, all conditions are met so applying the One-Sample T Test is justified (Laerd Statistics).

4. RESULTS

First, it is checked whether the variable ‘’innovative behavior’’ is normally distributed. Figure 1 shows a histogram which is used for this.

Figure 1. Histogram of the score on innovative behavior



Based on this figure, the conclusion can be drawn that the variable ‘’innovative behavior’’ seems to be normally distributed. What stands out is the outlier on the left, someone scored an ‘’one’’ on innovative behavior. That means that a respondent filled in a 1 in each of the fourteen questions (seven for exploration and seven for exploitation) which are used to calculate the innovative behavior. It is very unlikely that someone scored that low, so probably the questions did not match with the respondents job or the respondent did not fill in the questions right. Therefore, this respondent is excluded in further analysis. Without taking this outlier into account, the distribution is to be considered as normal.

Table 4 shows the number of respondents who moved as a kid. The table shows that there are more people who did not moved as a kid than people who moved as a kid, namely 53 people who did not moved against 31 people who moved as a child.

Table 4. Moved as a kid

		Frequency	Percent
Valid	no	53	63,1
	yes	31	36,9
	Total	84	100,0

Table 5 provides an overview of the frequency of the respondents feeling about their move(s) as a kid. The table indicates that the respondents are quite positive about moving as a kid, only five respondent out of 31 have negative feeling about moved. Ten respondents are neutral and the other 16 are positive.

Table 5. Feeling about moved as a kid

		Frequency	Percent
Valid	Very negative	2	6,5
	Negative	3	9,7
	Neutral	10	32,3
	Positive	14	45,2
	Very positive	2	6,5
	Total	31	100,0

Table 6 gives an overview of the descriptive statistics of the most important continuous variables. The means for the variables exploration and exploitation are 4.69 and 4.55 The mean for innovative behavior is 4.62. Also this table shows that the individuals who moved are feeling quite positive about their move(s), the mean is 3.35, which is between neutral and positive.

Table 6. Descriptive Statistics

	Age	Tenure in company	Tenure in position	Feeling about moved as a kid	Score exploration	Score exploitation	Score innovative behavior
Minimum	30	1	0	1	1	2,5	2,92
Maximum	64	35	36	5	6,5714	7	6,12
Mean	43,55	11,89	5,05	3,35	4,690476	4,5516	4,621
Std. Deviation	9,544	9,613	6,507	0,985	1,1894201	0,97044	0,74095

Table 7 shows the results of a general linear model analyses. In this model the score on innovative behavior is the dependent variable. Model 1 consist of all the control variables, in Model 2 the independent variable ‘’moved as a kid’’ is included. The general linear model analyses shows that the model is not significant. Since the model is not significant, the results will not add much value, because in the results coincidence may play a role. Also none of the variables influence the dependent variable on a significant level. This is surprising, because other studies already found that the control variables influence innovative behavior. The score of -0.006 on the B by the category ‘’not moved as a kid’’ indicates that people who moved as a kid scored higher on innovative behavior, but not that much. The Adjusted R Square, the number that indicates the percentage of the independent variable is explained by the variables used, increases by adding the variable ‘’moved as a kid” to the model. But because the model is not significant, this means nothing.

Table 7. General Linear Model to explain the influence of having moved as a kid on the score of innovative behavior (N=84)

	Model 1	Model 2
	B	B
Tenure in company	-0,013	-0,013
Tenure in position	0,002	0,002
[Highest education is HBO (University of applied sciences)]	0,007	0,008
[Highest education is Bachelor's Degree at a University]	0,165	0,168
[Highest education is Master's Degree or higher]	Reference	Reference
Age	0,01	0,01
[Not moved as a kid]		-0,006
[Moved as a kid]		Reference
R Square	0,022	0,022
Adjusted R Square	0,041	0,055

Notes: * relation is significant at the 0.05 level (two-tailed)

Table 8 shows the result of an independent samples T-test between the variable ‘’moved as a kid’’ and the variable score on innovative behavior. The Levene’s test is used to test whether the variances are equal or not. This test assumes that the variances are equal, so if the result is significant (<5%), the assumption is that the variances are not equal. If the result is not significant, the assumption is that the variances are equal. In this case the score is not significant (0.33), so the assumption is that the variances are equal. This means the results of the test can be found in the upper row of each variable. The test compared the means of two variables, the difference stands in the column ‘’mean difference’’. The mean difference is -0.003, being a very low score on a range from 1 to 7 (also see table 9). The difference of the compared means is significant when it is for 95 percent sure that the difference exists. This is the case when the level of significance is lower than 0.05 (five percent). The result of the level of significance in this test is 0.986, a very high score. That is higher than 0.05, so there is not a significant difference between individuals who have moved as a kid and the individuals who have not moved, and their score of innovative behavior. Therefore, H1 is rejected. There is no clue that indicates that individuals who moved as a kid are more innovative as individuals who have not moved as a kid.

Table 8. Independent Samples Test

		Levene's Test for Equality of		t-test for Equality of Means					
		F	Sig.	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Score innovative behavior	Equal variances assumed	0,947	0,333	-0,017	0,986	-0,00294	0,16855	-0,33825	0,33237
	Equal variances not assumed			-0,018	0,986	-0,00294	0,16369	-0,32951	0,32363

Table 9. Comparison of the groups ‘’moved as a kid’’ and ‘’did not moved as a kid’’

	Moved as a kid	N	Mean	Std. Deviation
Score innovative behavior	No	53	4,6199	0,77418
	yes	31	4,6229	0,69284

Table 10 shows another general linear model analyses. In this model again the score on innovative behavior is the dependent variable, now the "feeling about moved as a kid" is the independent variable. Therefore, the sample is reduced to 31 cases, because only individuals who moved as a kid are analyzed. Model 1 consist of all the control variables, in Model 2 the independent variable is included. Again the test demonstrates that the model is not significant, so the results will not add much value. And again none of the variables influence the dependent variable on a significant level, which is again not the expected outcome. Also here there is little positive relation between the independent and dependent variable, but it is not significant. This time the Adjusted R Square decreases by adding the independent variable to the model.

Table 10. General Linear Model to explain the influence of feeling about moved as a kid on the score of innovative behavior (N=31)

	Model 1	Model 2
	B	B
Tenure in company	-0,015	-0,015
Tenure in position	-0,048	-0,049
[Highest education is HBO (University of applied sciences)]	0,115	0,139
[Highest education is Bachelor's Degree at a University]	2,347	2,367
[Highest education is Master's Degree or higher]	Reference	Reference
Age	0,012	0,013
Feeling about moved as a kid		0,025
R Square	0.249	0.250
Adjusted R Square	0.099	0.063

Notes: * relation is significant at the 0.05 level (two-tailed)

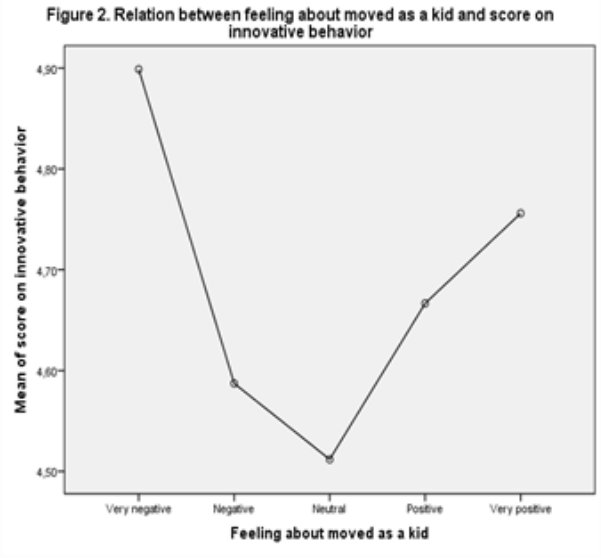


Figure 2 shows the mean of the score on innovative behavior by the different categories of the variable ''feeling about moved as a kid''. This figure indicates clearly that there is not a positive relation between both variables, it is not a linear graph. It is a parabola, so the score on innovative behavior decreases from the category very negative to neutral and increases again from neutral to very positive. So for that reason, also H2 is rejected. It is not the case that the more positive individuals feel about their move(s), the higher they score on innovative behavior.

5. CONCLUSION

This thesis studies ''moving as a kid'' as possible influencer of innovative behavior. Differences in score on innovative behavior between people who moved as a kid and people who did not move as kid, are analyzed and the score on 'feeling about moved as a kid' is coupled with the score on innovative behavior.

The means of score on innovative behavior for the two groups who did or did not move were almost equal, the tests did not show a significant difference. As a consequence, hypothesis 1 [H1] is being rejected. It can be concluded that individuals who moved in their childhood do not score significant higher in innovative behavior than individuals who have not moved in their childhood.

There is no significant evidence found that ''feeling about moved as a kid'' correlates positively to innovative behavior. Both people who feel negative about moving as a kid, and people who feel positive about moving as a kid score higher on innovative behavior than people who are neutral about their feelings about moved as a kid. For that reason, also hypothesis [H2] is rejected. It can be concluded that people who think more positive on their moving as a kid, do not score significant higher on innovative behavior.

Since both hypotheses are rejected, the conclusion of this thesis is that ''moving as a kid'' does not influence innovative behavior.

6. DISCUSSION

There is not found a relation between having moved as a kid and the score on innovative behavior. There was barely a difference in the mean of the score on innovative behavior between the two groups (moved as a kid and did not moved as a kid). The reason for this is unclear. It is possible that the effect of change during childhood does not play any role when the people are adults. It is also possible that positive effects of moving as a kid will be negatively impacted by other potential, negative effects like a lower level of well-being as adult (Oishi & Schimmack, 2010). It could also be that growing up in a stable environment and thus not moving as a kid, has similar effects on innovative behavior. Another explanation could be the limitation of the research: the sample is too small or the adjustments to the Mom scale causes a wrong measure.

Also the hypothesis '' The more positive people think of their moving as a kid, the higher they score on innovative behavior'' is rejected. Although the sample is small, just 31 cases, it stands out that individuals both being more negative as more positive about their move(s) as a kid, scoring higher on innovative behavior. It is possible that people who think negative about moving are introvert people. They are more innovative, because they are more on their own and by that, they develop their own judgement of value of their production. And the people who are positive about moving as a kid are extravert people, who by developing better social skills are more innovative. The people who are neutral about this

experience could be between introversion and extraversion, what makes them less innovative.

6.1 Limitations

Since the respondents are people out of the network of a particular group of researchers, the respondents are not randomly selected. This might cause the sample not being representative (Babbie, 2007). Also the measurement of innovative behavior could influence the results. The scale used to measure innovative behavior is actually a scale for managers, but in this thesis used to measure the score on innovative behavior of high-educated people. Also two questions of this scale are replaced for two other questions. Although the deducted questions from another article scored well in the factor analysis and the reliability was also good, this is not the way it normally works. It is possible that the scale is not valid or do not fit the sample of high-educated people. Also the sample was small, 85 cases overall and for the variable ‘’feeling about moved as a kid’’ 31 cases. This number is relatively low.

6.2 Future research

There are numerous suggestions for future research. One suggestion for future research is to do a similar research on the same two hypothesis, but in such a set up that the limitations of the study in this thesis are not there. It is interesting to do such a research on a larger scale, so with a bigger sample. Also the operationalization of individual behavior could be looked into, as well as a more random selected group of participants.

It might also be interesting to test some other childhood experiences, for example whether the parents of the respondents are divorced during his/her childhood or not.

7. BIBLIOGRAPHY

Zhou, J., & George, J. M. (2001). When Job Dissatisfaction Leads to Creativity: Encouraging the Expression of Voice. *Academy of Management Journal*, 682-696.

Achilladelis, B., Jervis, P., & Robertson, A. (1971). *A study of success and failure in industrial innovation.* Sussex: University of Sussex Press.

Adler, P. S., Goldoftas, B., & Levine, D. I. (1999). Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. *Organization Science*, 43-68.

Amabile, T. M. (1983). *The social psychologg of crealioily.* New York: Springer-Verlag.

Aryee, S., Walumbwa, F. O., Zhou, Q., & Hartnell, C. A. (2012). Transformational Leadership, Innovative Behavior, and Task Performance: Test of Mediation and Moderation Processes. *Human Performance*, 1-25.

Babbie, E. (2007). *The Practice of Social Research.* Wadsworth: Cengage Learning.

Bălău, G., Faems, D., & Van der Bij, H. (2012). Individual Characteristics and Their Influence on Innovation:. *International Conference on Innovation & Management* (pp. 887-901). Eindhoven: Wuhan University of Technology Press, Wuhan, China.

Basu, R., & Green, S. G. (1997). eader-Member Exchange and Transformational Leadership: An Empirical Examination of Innovative Behaviors in Leader-Member Dyads. *Journal of Applied Social Psychology*, 477-499.

Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: the productivity. *The Academy of Management Review*, 238-256.

Birkinshaw, J., & Gibson, C. (2004). Building ambidexterity into an organization. *MIT Sloan Management Review*, 47-55.

Brown, M. (2008). Comfort Zone: Model or metaphor? . *Australian Journal of Outdoor Education*, 3-12.

Buys, J. (1984). Innovatie en interventie: Een empirisch onderzoek naar de effectiviteit van een procesgeoriënteerde adviesmethodiek voor innovatieprocessen., (p. 254).

Carpenter, M., Call, J., & Tomasello, M. (2005). Twelve- and 18-month-olds copy actions in terms of goals. *Developmental Science*, 13-20.

Cowan, R., Sanditov, B., & Weehuizen, R. (2011). Productivity effects of innovation, stress and social relations. *Journal of Economic Behavior & Organization*, 165-182.

Daft, R. L., & Lengel, R. H. (1986). Organizational information require-ments, media richness and structural design. *Management Science*, 554–571.

de Veaux, R. D., Velleman, P. F., & Bock, D. E. (2005). *Stats: Data and Models.* Boston: Pearson.

De Visser, M. (2013, March 28). Individual, team and organizational antecedents of explorative and exploitative innovation in manufactering firms. Enschede, Overijssel, Nederland.

Evans, R. I. (1967). *Resistance to innovation in higher.* San-Francisco: Jossey-Bass.

Farr, J. L., Hock-Peng, S., & Tesluk, P. E. (2003). Knowledge Management Processes and Work Group Innovation. *The international handbook on innovation*, 574-586.

Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, 693-706.

Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 90-105.

Hitt, M. A., Keats, B. W., & DeMarie, S. M. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *Academy of Management Executive*, 22-42.

Ho, L.-H., Wang, Y.-P., Huang, H.-C., & Chen, H.-C. (2011). Influence of humorous leadership at workplace on the innovative behavior of leaders and their leadership effectiveness. *African Journal of Business Management*, 6674-6683.

Instituut voor Bodymind Integration. (2013, December 15). *Persoonlijkheidsstoornissen*. Retrieved April 23, 2015, from Website van het Instituut voor Bodymind Integration: http://bodymindintegration.com/persoonlijkheidsstoornissen/

Kalyar, M. N. (2011). Creativity, self-leadership and individual innovation. *The Journal of Commerce*, 20-28.

Kanter, R. M. (1988). When a thousand flowers bloom: structural, collective and social conditions for innovation in organizations. *Research in Organizational Behavior*, 169-211.

Knoll, S. W., & Horton, G. (2011). The Impact of Stimuli Characteristics on the Ideation Process: An Evaluation of the Change of Perspective 'Analogy'. *System Sciences (HICSS), 2011 44th Hawaii International Conference on* (pp. 1-10). Kauai: IEEE.

Koestner, R., Walker, M., & Fichman, L. (1999). Childhood Parenting Experiences and Adult Creativity. *Journal of Research in Personality*, 92-107.

Laerd Statistics. (n.d.). *Independent T-Test using SPSS.* Retrieved Juni 22, 2015, from Website of Laerd Statistics: https://statistics.laerd.com/spss-tutorials/independent-t-test-using-spss-statistics.php

Leonard-Barton, D. (1992). Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development. *Strategic Management Journal*, 111-125.

Levinthal, D. A., & March, J. G. (1993). The Myopia of Learning. *Strategic Management Journal*, 95-112.

Major, D. A., Turner, J. E., & Fletcher, T. D. (2006). Linking proactive personality and the Big Five to motivation to learn and development activity. *Journal of Applied Psychology*, 927-935.

Mansfeld, M. N., Hölzle, K., & Gemünden, H. (2010). Personal characteristics of innovators - an empirical study of roles in innovation management. *International Journal of Innovation Management*, 1129-1147.

March, J. G. (1996). Continuity and Change in Theories of Organizational Action. *Administrative Science*, 278-287.

Markham, S. K., & Griffin, A. (1998). The breakfast of champions: Associations between champions and product development environments, practices and performance. *Journal of Product Innovation Management*, 436-454.

McGrath, R. G. (2001). Exploratory learning, innovative capacity and managerial oversight. *Acedemy of management journal*, 118-131.

Miron, E., Erez, M., & Naveh, E. (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? *Journal of Organizational Behavior*, 175–199.

Moon, H., Kamdar, D., Mayer, D. M., & Takeuchi, R. (2008). Me or we? The role of personality and justice as other-centered antecedents to innovative citizenship behaviors within organizations. *Journal of Applied Psychology*, 84-94.

Myers, S. M. (1999). Residential Mobility as a Way of Life: Evidence of Intergenerational Similarities. *Journal of Marriage and Family*, 871-880.

Oishi, S., & Schimmack, U. (2010). Residential mobility, well-being, and mortality. *Journal of Personality and Social Psychology*, 980-994.

Olszewski-Kubilius, P. (2000). The Transition from Childhood Giftedness to Adult Creative Productiveness: Psychological Charachteristics and Social Supports. *Roeper Review*, 65-72.

Papadakis, V., & Bourantas, D. (1998). The chief executive officer as corporate champion of technological innovation: aii empirical investigation. *Technology Analysis & Strategic Management*, 89-110.

Poppelaars, W. (2012). *Exploitatie en Exploratie: ambidexterity*. Retrieved Juni 8, 2015, from Afstudeeronderzoek door Wendy Poppelaars, aan de Erasmus Universiteit Rotterdam: https://wendypoppelaars.wordpress.com/downloads/definitie-1/

Rosenkopf, L., & Nerkar, A. (2001). Beyond Local Search: Boundary-Spanning, Exploration, and Impact in the Optical Disk. *Strategic Management Journal*, 287-306.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, 54-67.

Scott, S. G., & Bruce, R. A. (1994). Determinants of Innovative Behavior: A Path Model of Individual Innovation in the Workplace. *Academy of Management Journal* , 580-607.

Seibert, S. E., Kraimer, M. L., & Crant, J. M. (2001). What do Proactive People do? A Longitudinal Model Linking Proactive Personality and Career Success. *Personnel Psychology*, 845-874.

Shapero, B. G., Hamilton, J. L., Stange, J. P., Liu, R. T., Abramson, L. Y., & Alloy, L. B. (2015). Moderate Childhood Stress Buffers Against Depressive Response to Proximal Stressors: A Multi-Wave Prospective Study of Early Adolescents. *Journal of Abnormal Child Psychology*.

Taggar, S. (2002). Individual Creativity and Group Ability to Utilize Individual Creative Resources: A Multilevel Model. *Academy of Management Journal*, 315-330.

Tidd, J., & Bessant, J. (2009). *Managing innovation.* West Sussex: John Wiley & Sons Ltd.

Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review*, 8-30.

Vermeulen, P. A., O'Shaughnessy, K., & de Jong, J. P. (2003, June). Innovation in SMEs: An Empirical Investigation of the Input-Througput-Output-Performance Model . Zoetermeer, Zuid-Holland, Nederland.

Volberda, H. W., & Lewin, A. Y. (2003). Guest Editors' Introduction Co-evolutionary Dynamics Within and Between Firms: From Evolution to Co-evolution. *Journal of Management Studies*, 2111-2136.

Vroom, V. H., & Pahl, B. (1971). Relationship between age and risk taking among managers. *Journal of Applied Psychology*, 399-405.

Vygotsky, L. S. (2004). Imagination and Creativity in Childhood. *Journal of Russian & East European Psychology*, 7-97.

White, A. (2008). From Comfort Zone to Performance Management. 1-17.

Xiaojun, L., & Peng, L. (2010). The Impact of Learning Culture on Individual Innovative Behavior. *Management and Service Science (MASS), 2010 International Conference on* (pp. 1-4). Wuhan: IEEE.

Appendix 1

The questions used to measure innovative behavior

To what extent did you, last year, engage in work related activities that can be characterized as follows:

Exploration item 1: (Ideas about) introducing any new or improved work processes

Exploration item 2: Using an external network to exchange information (e.g. with universities, suppliers, competitors etc.)

Exploration item 3: Focusing on strong renewal of products/services or processes

Exploration item 4: Activities of which the associated yields or costs are currently unclear

Exploration item 5: Activities requiring quite some adaptability of you

Exploration item 6: Activities requiring you to learn new skills or knowledge

Exploration item 7: Activities that are not (yet) clearly existing company policy

Exploitation item 1: Activities of which a lot of experience has been accumulated by yourself

Exploitation item 2: Activities which you carry out as if it were routine

Exploitation item 3: Activities which serve existing (internal) customers with existing services/products

Exploitation item 4: Activities of which it is clear to you how to conduct them

Exploitation item 5: Activities primarily focused on achieving short-term goals

Exploitation item 6: Activities which you can properly conduct by using your present knowledge

Exploitation item 7: Activities which clearly fit into existing company policy