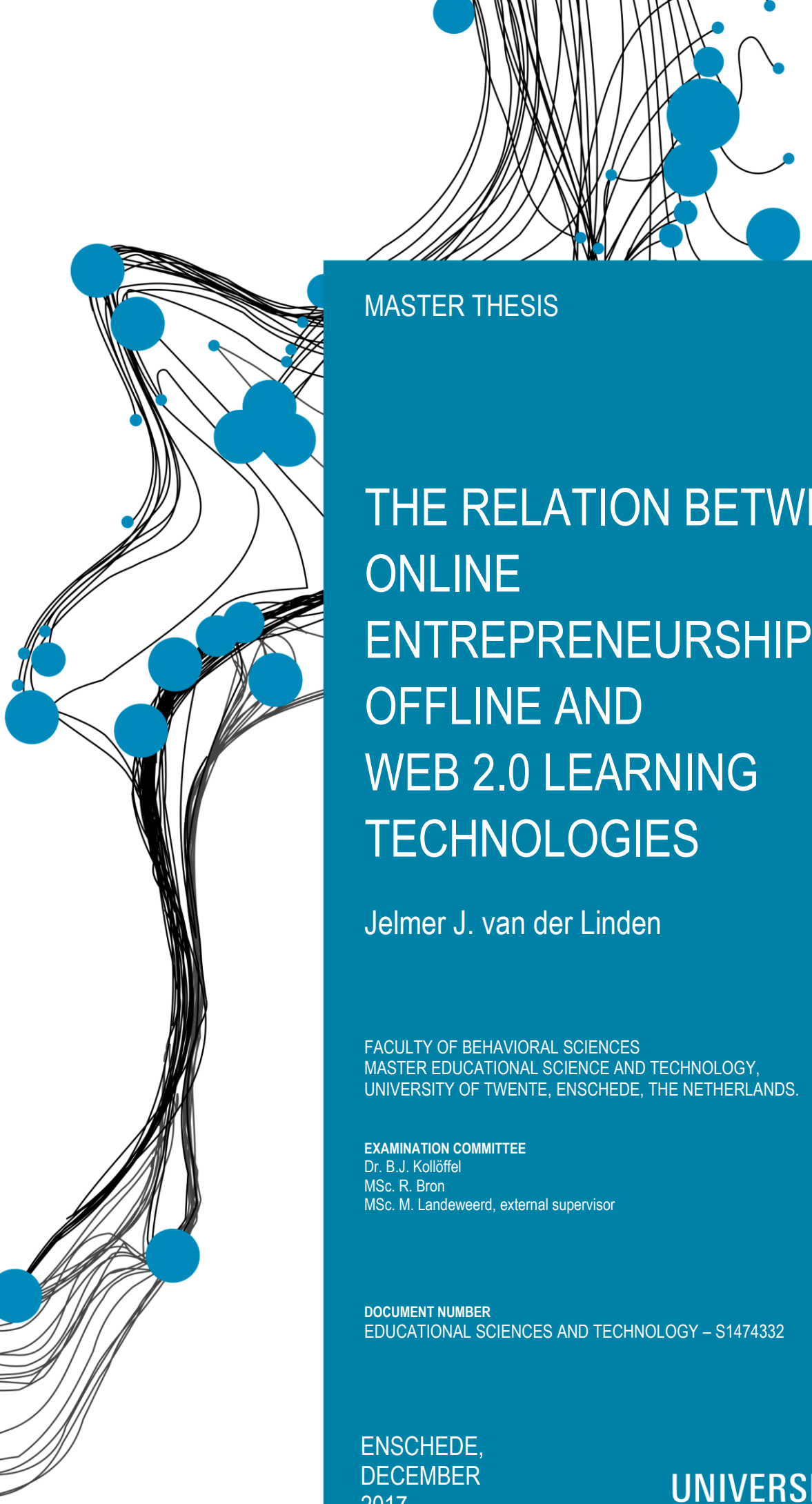

MASTER THESIS

THE RELATION BETWEEN ONLINE ENTREPRENEURSHIP AND OFFLINE AND WEB 2.0 LEARNING TECHNOLOGIES

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Abstract

Training and development have always been a central concern in human resource development (HRD). With the development of the Internet considerable research attention focused on the development of entrepreneurs who are capable to venture on the dynamic complex environment. Web 2.0 learning technologies, such as forums and YouTube videos, are important instruments which could help the entrepreneurs in taking a greater control of their learning. The technologies have shown to have a great potential for leadership development, because the learning experiences that are made possible through the web 2.0 learning technologies are active, process-based, anchored in and driven by the learner's interest. However, even though these technologies exist it does not mean that actual learning takes place for everyone, for here some skills are required so that these learning experiences reach the high quality necessary.

Because learning is always related to the personal experience and characteristics of the learner, this research focuses specifically on how the personal characteristics of entrepreneurs relate to the use and the variety of the use of online and offline learning technologies. Researching both how the personal characteristics of the user relate to the extent as well as the variety of the use of offline and online technologies help designers, educators and instructors in understanding the different impact of user characteristics on the tools, what opportunities Web 2.0 learning technologies provide for teaching and learning in contrast with offline learning technologies, what the barriers they might encounter are when designing, implementing or using offline and Web 2.0 learning technologies and how to effectively implement the new tools in teaching.

This study is based on an online survey which resulted in 281 filled-in questionnaires. It is hypothesized that the personal factors are related to both the use of as well as the variety of the use of offline and web 2.0 learning technologies by the online entrepreneur. Multiple regression and chi square analyses were performed to measure the relations between the predicting variables and the extent and the variety of the use of offline and web 2.0 learning technologies. In general, it can be stated that this study showed that certain personal factors influence the extent and the variety of the use of offline and web 2.0 learning technologies by online entrepreneurs. The main outcome is that the *age*, *work experience (years working as an online entrepreneur)*, *proactive approach* and the *digital literacy* of the respondent relates to the extent and the variety of the of web 2.0 learning technology. It can be seen as surprising that certain factors such as the *self-reliance* and the level of *self-directed learning* of the respondent are not statically significantly correlated with the extent and the variety of the use of offline and web 2.0 learning technologies. Furthermore, the found correlations in this research were relatively small which can be seen as surprising as well.

All-in-all, the results of this research indicate that it is not solely enough to have access to web 2.0 learning technologies to use them. It is recommended that organizations with the wish to develop web 2.0 learning technologies perform research how they can effectively reach their (potential) users and help them assist in knowledge sharing.

Keywords: Web 2.0 learning technologies, self-directed learning, digital literacy, proactive approach, self-reliance, educational level, age, gender.

"Our lives are not our own. We are bound to others, past and present,
and by each crime and every kindness, we birth our future."

—

David Mitchell*, *Cloud Atlas

Preface

Writing this master thesis could not be possible without the help of a few individuals. Therefore I would like to thank the people who helped me with my master thesis.

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Contents

1. Introduction

1.1 Background

The development of the Internet can be felt in all aspects of daily life. The Internet transformed the ways in which people communicate, enjoy entertainment and how they perform business. While training and development has always been a central concern in human resource development (HRD), in recent years considerable research attention has focused on entrepreneurs who are capable to face the dynamic complex environment called the Internet (Murah & Abdullah, 2012; Spreitzer, 2006). The challenges that arise with the dynamic and complex environment require that entrepreneurs who wish to venture on the Internet need to continuous update their knowledge and skills. A way to address the need of continuous leadership development is to focus HRD efforts on assisting entrepreneurial leaders to take a greater control of their learning (Nesbit, 2012), which becomes possible with web 2.0 learning technologies. Web 1.0 was read-only, where Internet users went online to find information similarly like going to the library. With web 2.0 people have become active participants and creators of content. Web 2.0 learning technologies in that sense are online learning environments in which learners are engaged into collaborative work and actively develop their knowledge and work on their skills without teacher control (Song & Lee, 2014). Web 2.0 learning technologies have shown to have a great potential for leadership development, because the learning experiences that are made possible through the web 2.0 learning technologies are active, process-based and anchored in and driven by the learner's interest (McLoughlin & Lee, 2010).

1.2 Web 2.0 learning technologies

Web 2.0 has allowed people to easily produce and share content online as well as connect and interact with other people around the world which share the same or similar interests. Brown and Adler (2008, p.18) stated that web 2.0 "*blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people*". For many HRD professionals this means a changed work environment, where the focus needs to be on learning experiences which are more personalized, reflexive, socially connected and involving (Prensky, 2001). To cope with this continuously changed work environment, it is essential to gain insights into how specific target groups take care of their learning. Not only will these insights help in how to design and implement the technologies according to the user's need and experiences, but additionally will help the professionals in supporting the learners in their life-long learning. Self-directed learning skills can enhance lifelong learning (Bolhuis, 2003) and increase the belief in oneself, the independence and the ambition of the learner. Knowles (1975) stated that people who take care of their own learning, learn greater, more excellent, more enduringly, more purposefully and with increased motivation. Learning, especially life-long learning, increasingly takes place in the work environment where the learner performs his or her job. According to the European Commission (EC) lifelong learning is defined as "*all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences, within a personal, civic, social and/or employment-related perspective*" (European Commission, 2001). To facilitate the life-long learning process of the entrepreneur it is therefore required that the strengths of both the physical offline place and digital online space are combined in a flexible and innovative way to the requirements of the user. Researching both how the personal characteristics of the user relate to the extent as well as the variety of the use of offline and online technologies help designers, educators and instructors in understanding the different impact of user characteristics on the tools, what opportunities Web 2.0 learning technologies provide for teaching and learning in contrast with offline learning technologies, what the barriers they might encounter are when designing, implementing or using offline and Web 2.0 learning technologies and how to effectively implement the new tools in teaching. An example of how a personal characteristic can influence the facilitation of the learning process is the age of the learner. Younger people, those who have grown up with the Internet, highly likely are more capable to manage their own learning with Web 2.0 learning technologies than their older counterparts who have little to no experience with the technologies. An offline learning instrument, such as a teacher, could then help support the older people with their learning through Web 2.0 learning technologies.

1.3 Entrepreneurship and learning

Learning through web 2.0 technologies has increasingly contributed to lifelong learning, because it has broken the geographic and economic barriers for learning (Loureiro, Messias & Barbas, 2012). Web 2.0 learning technologies give entrepreneurs the ability to decide *how* and *when* they learn. Rather than reading a book or follow a traditional course in a classroom, web 2.0 learning technologies make it possible to use and *interact* with *a variety* of content from *anywhere* you want as long as you own a laptop, smartphone or tablet. Unsworth (2008, blz. 229) stated that *"web 2.0 learning technologies enables learners in their self-direction and their knowledge building in ways that go beyond "the less flexible, often outdated and less innovative traditional information services from years past*". However, even though these technologies exist it does not mean that actual learning takes place for everyone, for here some skills are required so that these learning experiences reach the high quality necessary. For example, Dron and Bhattacharya (2007, p. 4) stated that *"for today's digital learners, those who move fluidly through the digital world, web 2.0 is a limitless learning landscape"*. Taking this into account, those who weren't "born attached to a computer" need to react to the market requirements and obtain the necessary skills to keep up with the changing world. A way this can be done is by using offline technologies to support learning through online technologies, which is also known as blended learning. Web 2.0 learning technologies can help the entrepreneur cope with, adapt to and, to a certain degree, enjoy the new uncertainties that the new dynamic environment brings (Heery & Salmon, 2000). Entrepreneurship promotes self-directed and lifelong learning as it promotes the idea of freedom and sustaining oneself as a self-employed person (Jones, 2009). It is surprising that as of yet the academic link between the personal characteristics of the entrepreneur and the use and the variety of the use of offline and web 2.0 learning technologies for learning is a relatively unexplored area. Gaining advanced insights into how online entrepreneurs facilitate their learning give educational professionals the chance to enhance the skills, attributes and behaviors which are required of the online entrepreneur to venture on the digital world as well as support and prepare the online entrepreneur for a lifelong of learning.

Concluding, the purpose of this study is to get a better insight into the relation between the personal characteristics of the entrepreneur and the use and the variety of the use of offline and web 2.0 learning technologies.

2. Conceptual framework

Few topics, if any, have received as much attention in the field of entrepreneurship in the past two decades as self-directed learning. During the same timespan a large group of new programs and practices, such as computer and video technologies, have increasingly gained interest and support of the learning field. In the current research a closer look is given to these dynamics.

2.1 Entrepreneurship and self-directed learning

Education offered to adults should be different from education offered to children or adolescents, simply because the needs and requirements as a learner differ. Knowles (1975) explained the way adults learn and emphasizes that adults are more self-directed in their learning and want to take the responsibility of their learning in their own hands. Adult learning principles should therefore contain this fundamental aspect. This especially counts for entrepreneurs, of which is expected that they take the responsibility of their own learning and development (Tseng, 2013). Therefore, self-directed learning, with its strong learning intention, necessary experience, and knowledge, has emerged as the dominant way of learning for entrepreneurs which wish to meet the complex demands and performance of the changing world of work (Smith, 2001). Knowles (1975) distinguished five different phases that are aimed at determining one's own learning process. These five phases are *determining one's own learning needs*, *formulating learning objectives*, *identifying resources for learning*, *selecting and implementing learning strategies* and lastly *evaluating the learning outcomes*. Entrepreneurs following these five phases know how to self-manage, self-monitor and take responsibility of their entrepreneurial career (Zhao, Seiber & Lumpkin, 2010).

The five phases of self-directed learning as defined by Knowles (1975) show a process perspective, which implies that self-directed learning can be seen as a learning process in which different actions need to be taken. In another perspective, the personal perspective, self-directed learning is seen as a personal characteristic. Guglielmino (1978) defined self-directed learning as the ability to voluntarily, independently and continually support one's own learning. This perspective shows self-directed learning as a personal trait of the learner. Existing research has acknowledged both the personal as well as the process perspective as relevant. Therefore, Brockett and Hiemstra (1991) suggested an encompassing perspective in which both the environmental factors, the learner's accountability over their learning process and the personal characteristics which are required to accept one's responsibility in learning, are incorporated. Furthermore, Raemdonck (2006) also referred to both aspects and defined self-directed learning as a characteristic and adaption process. Here, the characteristics refer to the personal characteristics and the adaption to the response to the requirements and possibilities which are offered by the environment.

Following this, entrepreneurial learning can be tied to the five following principles (which have been dubbed by Knowles (1984) as 'Andragony'):

1. *Self-concept*: Existing research showed that individuals who are recognized as being self-directed learners tend to outperform other people in jobs in which a high degree of problem solving, creativity and change are required (Brockhaus & Horwitz, 1985). Most educators in the field of entrepreneurship would stress that the process of creating a new venture involves a high degree of problem solving ability as well as creativity and change capabilities (Gugliemino & Klatt, 1993). Entrepreneurs who are capable to effectively translate their skills to a chosen entrepreneurial career are more likely to be successful.
2. *Experience*: Previous research has pointed out the role of experience, and in particularly prior start-up experience, as an agent for entrepreneurial learning (Box, White, & Barr, 1993; Sapienza & Grimm, 1997). Holcomb, Ireland, Holmes and Hitt (2009) described entrepreneurial learning as the process by which entrepreneurs acquire new knowledge from direct experience and from observing the behaviors, actions, and results of others.
3. *Learning readiness*: Entrepreneurs require a skillset which helps in the creation and establishment of a business venture (Hisrich & Peters, 1992).The learning content should help the entrepreneur in some substantive way in making their work easier or better.

4. *Learning orientation*: The focus of the entrepreneur is on the growth of an enterprising mindset and a required skillset which allows them to set-up or sustain their organization (Cap, Blaich, Kohl, von Raesfeld & Harms, 2016). Because entrepreneurs are often busy people they expect that their course will help them with problems which already exist in specific contexts in their lives.
5. *Motivation*: Human motivation plays an important role in the entrepreneurial process. Entrepreneurs are learning for a reason and they can strive for better results from their own motivation (Fogarty & Pete, 2004).

To summarize, studies have shown that people who take the initiative in learning and improve their learning competencies are likely to be more successful in their entrepreneurial endeavors (Tseng, 2013). Entrepreneurs would become more self-directed when they know the intended learning outcomes and receive constructive feedback regarding their learning process. In order to succeed, entrepreneurs need to make their own shortcomings, as well as their lack of knowledge and skills, visible and work on them. Web 2.0 applications might be effective in stimulating the entrepreneur's attention, supporting their confidence and increasing their motivation during the learning process. An increased understanding of how the personal characteristics are related to the use and variety of the use of offline and of web 2.0 learning technologies could help in this matter.

2.2 Personal factors of the adult entrepreneurial learner and the relation with offline and web 2.0 learning technologies

In this research a total of eight personal characteristics have been included. Firstly, the ***age*** of the respondent is added to this research because previous research found that younger people are more accustomed to online technologies and therefore use these technologies more extensively than older people (Olson, O'brien, Rogers & Charness, 2012). Loges and Jung (2001) stated that the Internet is a different resource for the older than the younger generation, with the emphasis on the experiences the different generations have with different media technologies, the goals they have as an individual user and the different social opportunities they have and require. For example, the younger generation might use the Internet for work, gaming and shopping whereas the use of the Internet by the older generation is strictly limited, for example solely for online banking. Furthermore, studies have shown that there is a growing recognition that today's youth will take over a world that is far more dynamic and complex than before and that web 2.0 technologies can enable much of the needed learning to cope with the changed world (P21, 2009). Secondly, ***the gender*** of the respondent is added to this research because previous research has shown gender difference when it comes to accepting web 2.0 learning technologies. Research from for example Enoch and Sopker (2006) showed that male respondents had a higher positive acceptance level towards web 2.0 learning technologies than females. Likewise, research from Hwang, Suk, Fisher and Vrongistinos (2009) found that males were more prone to choosing web 2.0 technologies for their learning than their female counterparts. Thirdly, the ***work experience (years working as an online entrepreneur)*** has been added to this research because obtaining more work experience gives a person the chance to learn, change and improve oneself which accordingly can increase the confidence with which he or she performs the job (Raemdonck, 2006). Guile and Griffiths (2001) stated that developments in communication and information technology is forcing continuous change in the work environment, where the potential for learning and high-skill development is considerable. Fourthly, ***the educational level*** of the respondent has been added to this research. According to a study by García-Martín and García-Sánches (2013) the higher the individual's educational level, the more advanced understanding the individual has about Web 2.0 and their function, which especially counts for the digital native generation (those born after 1985). Additionally, research in the field of HRD pressed the need to educate young people, and their older counterparts, in the full extent of the technologies which surround them (Voogt & Knezek, 2008). And while it is important to train people in using web 2.0 learning technologies for learning, it is also important to train them in the potential use as well as the application and the diversity in the web 2.0 learning technologies available. Fifthly, ***the self-reliance*** of the respondent has been added to this research, because according to Cameron (2007) self-reliance can be defined by having confidence in oneself to manage one's own affairs and preferring not to have help. Since web 2.0 learning technologies allows learners to control *how*, *what* ,*when* and *where* to learn it seems only fitting that a higher level of self-reliance helps people in making the best of web 2.0 learning technologies. Sixthly, ***the proactive approach*** of the participant has been added to this research. Having a proactive approach influences

learning because it ensures personal initiative in various activities and situations (Seibert, Kraimer, & Crant, 2001). Moore (1990) stated that the greater the geographic distance between learners and educators, the more the learner has to take responsibility of his or her learning. Therefore it is expected that the level of proactive approach of the respondent is related to the use of web 2.0 for his or her learning. The seventh variable, ***digital literacy*** is added in this research because digital literacy involves a large variety of complex cognitive, emotional and sociological skills which are required to function effectively in digital environments (Mohammadyari & Singh, 2015). Finally, the variable ***self-directed learning*** is added to this research as a personal characteristic. This is because web 2.0 learning technologies give the control of the learning to the user in both *how*, *what*, *when* and *where* they learn. Therefore it is expected that the higher the level of self-directed learning of the respondent, the higher the use of web 2.0 technologies for learning.

2.3 Web 2.0 learning technologies

Entrepreneurs are often busy people and therefore the learning material should address problems which already exist in their life. This has become possible with the rise of the World Wide Web in which it is easier for people to access information than ever before. In the learning field this can be recognized by the use of web 2.0 learning technologies. Miller (2006) stated that web 2.0 is about communicating and sharing information with individuals with similar interests. So in line with that statement, web 2.0 learning technologies can be defined as online learning environments where learners are engaged into collaborative work and actively develop their knowledge and work on their skills without teacher control (Song & Lee, 2014). The biggest advantage of web 2.0 learning technologies is that the learner can work independently of time and others, as the course material and information are accessible at all hours. For example, a learner can easily search for a YouTube video about Google Adwords (an online advertisement program) when he or she want to know all about advertising parameters like click-through-rates or funnels. Or when a learner want to know about HTML, a computer language devised to allow website creation, he or she can easily find tutorials online from for example W3Schools which explains in detail how to build a website. Another example of a web 2.0 learning technology for online entrepreneurs is Webshop Heroes. Webshop Heroes is an online course in which online entrepreneurs can choose from a series of relevant topics, such as marketing and retail, to increase their knowledge. Additionally Webshop Heroes provides techniques (such as a forum) which stimulate the discussion of the content with fellow online entrepreneurs. Web 2.0 learning technologies, such as forums, blogs, rss feeds and podcasts have increasingly been used by entrepreneurs for their self-development (Senges, Brown & Rheingold, 2008). With the many web 2.0 learning technologies that can be found on the Internet, self-directed learners are required to make decisions about the content to view as well as on which format (for example video, audio or pdf). If these decisions are not consistent with the goal of the leaner it can reduce the effect of the training material (Ghirardini, 2011). Therefore, the self-directedness of the learner, which among others incorporates identifying the knowledge, skills and resources which are needed to support the actions and decisions to perform a task, influences the impact of the web 2.0 learning technology (Ghirardini, 2011). Additionally, since the individuals' personality is an influential variable on information behaviors the personal characteristics have an influencing effect on the use of web 2.0 learning technologies (Zhao & Kemp, 2013). An example of a personal characteristic of a learner which could hinder the use of web 2.0 learning technologies is the digital literacy of the user. The concept of digital literacy represents the knowledge, skills and behaviors of a single individual on everything digital (e.g. smartphones, tablets and computers). Finally, Admiraal and Lockhorst (2009) stated that the web 2.0 learning technologies lowers the cost of delivering the training, increases the flexibility of the learners in terms of place and time, encourages the self-management of learning and lastly enables on-demand training. Though, the contextual environment can still hinder the effective use of web 2.0 learning technologies. For example because the use of social media (which can serve as a web 2.0 learning technology) is simply not allowed within the organization. Despite this, it is easy to see why web 2.0 learning technologies have a huge potential for the learning for online entrepreneurs.

2.4 The design of learning technologies

Entrepreneurs have a continual need for upgrading their professional skills and knowledge. In that respect, web 2.0 learning technologies and its proper application have proven to be important. Nonetheless, designing effective and engaging web 2.0 learning technologies is a creative process which is unique to each

situation, among which are the users and their personal characteristics (Pappa & Pannese, 2010). With an advanced understanding of how the personal characteristics of the entrepreneur are related to the use and the variety of the use of offline and web 2.0 learning technologies it becomes possible to effectively support individuals in their learning. Technologies in that matter are only as valuable as far as they effectively support the human conditions on which learning depends (P21, 2009). For example, when the age of the learner is negatively related to the use of web 2.0 learning technologies and positively related to the use of offline learning technologies a blended learning method could be investigated which could improve the learner's knowledge while additionally increasing his or her digital skills. Concluding, only with a better understanding of how the personal characteristics are related to the extent and the variety of the use of offline and Web 2.0 learning technologies it becomes possible to come to effective learning solutions.

3. Research question

This study was aimed at investigating the relation between the personal factors of the online entrepreneur to the use and the variety of the use of web 2.0 learning technologies. In order to guide the research, the two following research questions are posed:

1. **To what extent do the personal factors of the online entrepreneurs' relate to the use of web 2.0 learning technologies?**

Definition of 'the use': The action of utilizing a web 2.0 learning technology as a mean for accomplishing or achieving a certain learning goal. For example; because the entrepreneur wanted to know more about the sudden lower position of his or her website in the search engine Google, he or she decided to watch a YouTube video which in detail explained the different types of Google ranking drops and how to deal with them. The YouTube video in here is the web 2.0 learning technology which is being used for increasing the knowledge about the certain issue at hand, which is the learning goal of the entrepreneur.

2. **To what extent do the personal factors of the online entrepreneurs' relate to the use of a variety of learning technologies, including online and offline?**

Definition of 'variety': Using different types of learning technologies as a mean for accomplishing or achieving a certain learning goal. For example; the entrepreneur wanted to know more about the sudden lower position of his or her website in the search engine Google. To do this he or she not only watched a YouTube video which in detail explained the different types of Google ranking drops and how to deal with them, but additionally made use of an eCommerce forum to consult with fellow entrepreneurs about the topic as well as that he or she made use of an online course about the topic. In here three different types of web 2.0 learning technologies, namely a YouTube video, an online forum and an online course, were being used to accomplishing or achieve an certain learning goal.

In addition, the following hypotheses are formulated:

Hypothesis 1: Based on the aforementioned, it is hypothesized that the personal factors of the online entrepreneur are related to the extent of the use of web 2.0 learning technologies.

Hypothesis 2: The personal factors of the entrepreneur have a relation to the variety to which the entrepreneur uses learning technologies, including online and offline, for his or her learning.

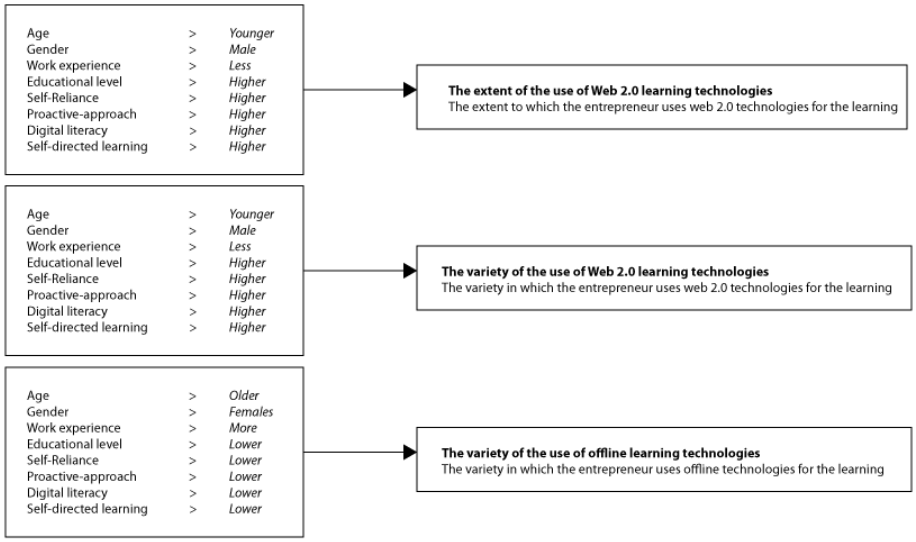

Figure 1. Schematic representation of the conceptual model

4. Method

4.1 Context

This study was carried out among the members of the WebwinkelKeur foundation. The WebwinkelKeur foundation is a non-profit foundation aimed at making the shopping on Internet safe. At the time of the performed research the client base of the WebwinkelKeur foundation existed out of > 3300 members with a total of > 4400 online stores. Foundation WebwinkelKeur developed a juridical label and a customer review tool which members of the organization can use. The client base of foundation WebwinkelKeur fits the research well because they are online entrepreneurs which run small to medium-sized webshops. This way the sample will exist out of units which share the same characteristics and traits which are of interest in this research.

4.2 Research methodology

An explanatory study was conducted with a cross sectional survey. Surveys are an appropriate method to investigate attitudes and orientations of a large(r) population that cannot be observed directly (Babbie, 2010). In addition, data gathering with a survey makes it possible to make generalizations from the sample which has been studied to broader groups beyond the sample (Swanson & Holton III; 2005). Furthermore, quantitative data makes the observations more explicit and objective, which then lead to more representative results (Babbie, 2010). A cross sectional survey was preferred, because there were no further expenses required as well as that the time for a longitudinal design was simply not there. The goal of the study is to investigate how the personal variables of the entrepreneur relate to the use and the (variety of the) use of offline and web 2.0 learning technologies. The data collection is obtrusive. Meaning that the subjects are aware of the fact that they are being studied, which in return can influence their answers on the questionnaire (Boudah, 2010). The dependent variable was the use and the variety of the use of web 2.0 learning and offline technologies and the independent variables were '*gender*', '*age*', '*work experience*', '*educational level*', '*self-reliance*', '*proactive approach*', '*digital literacy*' and '*self-directed learning*'.

4.3 Procedure

In this study a digital survey was used (see Appendix A). The main reason for making use of a survey is that the population in which the study will be held exists out of small organizations spread across the Netherlands. So for convenience and simplicity it was chosen to distribute the survey online. To promote the survey, foundation WebwinkelKeur has given access to its members. Because the survey was held online there was a risk for non-response. To minimize this risk, messages were placed on social media and in the mails from employees from the foundation WebwinkelKeur to its members. Additionally, after one week a reminder was send by e-mail. The survey began on the 29th of March 2017 and finished on the 11th of April 2017. To increase the participation rate, the organization raffled two of the most expensive versions of the membership of their product.

4.4 Respondents

This study was aimed at gathering specific data from a homogenous sample, e.g. a sample of which the units (e.g. the people) share the same characteristics. All members (e.g. 3576) of the foundation were approached in order to obtain reliable results. The data collection resulted in 385 respondents (response rate = 11.04%). In the first phase of data processing, 104 respondents were excluded because of missing values on at least one scale. In total 281 respondents remained in the starting dataset. Of the 281 respondents 171 respondents were male (60.9%) and 110 were female (39.1%). The ages of the respondents ranged from 18 to 73 and the average age can be determined at 41.78 (SD = 12.40). In addition, the respondents have an average work experience of 6.11 years in online entrepreneurship (SD = 5.73). Regarding the educational level of the respondents it can be concluded that almost half of the respondents have completed (or are studying on at least) intermediate vocational educational level or higher general secondary education level (51.6%). In addition 48.4% of the respondents have (or are studying for) a diploma of higher vocational education or university. In table 1 a complete overview of the descriptive statistics can be found.

Table 1. ***Overview Descriptive Statistics Respondents***

Variable	Mean		SD
Gender	Male	60.9%	
	Female	39.1%	
Age (years)	41.78		12.40
Education	None	0.71%	
	Primary	0.71%	
	Primary education (LBO, VMBO)	2.49%	
	Secondary general education (MAVO)	6.05%	
	Secondary vocational education (MBO)	30.60%	
	Higher general secondary education (HAVO, VWO)	11.03%	
	Higher professional education (HBO)	32.74%	
	University education (WO)	2.49%	
	Master (HBO)	4.63%	
	Master (WO)	7.83%	
	PHD	0.71%	
Work experience (years working as online entrepreneur)	6.11		5.73

4.5 Instrumentation

In this research, a survey was conducted which was used to gather data aimed at determining the extent to which online entrepreneurs use web 2.0 learning technologies for their learning. Additionally the survey was used to collect data which focused on the extent to which the personal characteristics of online entrepreneurs relate to the use of a variety of web 2.0 learning technologies. This survey is based upon existing, valid and reliable scales. In total the survey consisted of 54 items, of which 36 were items with a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) (see Appendix A for the complete survey).

Self-directed learning. To measure the extent to which individuals are self-directed in their learning, the scale 'self-direction learning orientation' was used which was developed by Raemdonck (2006). In research among low and high qualified employees the scale turned out to be reliable and valid (Raemdonck, 2006).The scale includes 13 items and was translated from English to Dutch because the questionnaire was carried out among a Dutch target group.

Web 2.0 learning technologies. To research the way people search for information the respondents were subjected to four case studies. In total four case studies were conducted in which the respondents were asked questions about juridical, search machine optimization, advertising and technical/ICT themes.

Personal variable. The following personal variables were included in this study: *gender*, *age*, *work experience (years working as an online entrepreneur)*, *employment status*, *educational level*, *self-reliance*, *pro-active approach* and *digital literacy*. For employment status respondents could choose between six multiple choice answers: *employed, own boss, no work (looking for work), no work (not looking for work), a houseman/wife, a student, retired* and *incapacitated*. The question was multiple-choice because the respondents can for example work part-time in wage labor while additionally working part-time as an online entrepreneur. For the question educational level respondents could choose between eleven possible answers, namely: *none, primary, primary education, secondary general education, secondary vocational education, higher general secondary education, higher professional education, university education, master (HBO), master (WO)* and *PHD.* Self-reliance was measured with a standardized test from Harrison, O'hara and McNamara (2011). For the variable proactive approach four items of Bateman's and Grant's (1993) 17-item measure were chosen. Finally, for digital literacy five items were picked from Van Deursen's (2014) instrument 'measuring Internet skills'. The items from the scales from Harrison (2011), Bateman's and Grant's (1993) and Van Deursen's (2014) were translated from English to Dutch because of the primary language of the target audience.

The questionnaire was made with the online survey tool 'Qualtrics' from the University of Twente. The estimated time to fill in the questionnaire was approximately ten to fifteen minutes.

4.6 Validity and reliability

In this study the validity and reliability of the instrument was ensured by factor and reliability analysis. The intention behind a factor analysis is to determine the underlying structure among variables and define the construct validity (Field, 2009). In this research, data has been gathered based upon 54 items, of which 37 items measuring variables that in itself cannot be directly measured. Therefore it is important to investigate whether the 37 different items really reflect a single concept. Consequently, the cronbach's alpha (α) will be performed. The cronbach's alpha is the most common measure of scale reliability. Reliability means that the measures of the study reflect the construct it wishes to measure (Field, 2009). The factor and reliability analysis has been performed with the dataset of 281 respondents. Use has been made of four principal axis factoring (PAF) analyzes because the focus in this research is on the sample and there is no plan to generalize the results beyond this sample. First a factor analysis was performed for the items of *self-directed learning*, secondly for the items of *self-reliance*, thirdly for the items of *digital literacy* and finally for the items of *proactive approach*.

The four factor analyses were performed using the same steps. In the first step the factor analysis for each dataset was evaluated by considering the sample size, factorability of the correlation matrix and outliners among cases (Pallant, 2013). The suitability of the data was confirmed for both factor analyses. In SPSS (a statistical software program) it is possible to check whether a sample size is adequate by performing a KMO (Kaiser-Meyer-Olkin)-test. In this study the sample size is adequate because the sample size scored a .819 on the first (*self-directed learning*), a .720 for the second (*self-reliance*), a .724 for the third (*digital literacy*) and a .742 (*proactive approach*) for the final KMO-test, which are bigger than the required 0.50.The factorability of the correlation matrix was checked by performing Bartlett's test of Spherity. This test proved to be significant.

Secondly, the adequacies for factor analysis were verified and the amount of components has been checked by performing the Kaiser's criterion, Bartlet's test of Sphericity and the Scree test. For the four analyses the Kaiser's criterion and Barlet's test of Sphericity confirmed the adequacy for factor analysis (see Appendix B). Additional analyses were performed for the four factor analysis to gather the eigenvalues for each component in the data. Based on the Scree test a four component solution was performed for *self-directed learning* which showed an explanation of 61.98% of the total variance. The factor analysis for *self-reliance* showed in total 4 components with eigenvalue's over Kaiser's criterion of 1 which explained in total 59.40% of the variance. The factor analysis for *digital literacy* showed in total 1 component with an eigenvalue over Kaiser's criterion of 1 which explained in total 46.76% of the variance. Finally, the factor analysis for *proactive approach* showed in total 1 component with an eigenvalue over Kaiser's criterion of 1 which explained in total 53.60% of the variance.

Thirdly, the promax rotation was executed to assist in the interpretation of the number of factors. The pattern matrix was used for the interpretation of the factor loadings of the items (See Appendix B for the rotation of each factor loading). To select which items fitted best within the model the removal criteria of Worthington and Whittaker (2006) were used. The removal criteria used were: items with factor loadings less than .32, items which had a factor loading which had less than 0.15 difference with the item with the highest factor loading and items with factor loadings higher than 0.32 on two or more variables. Based on these removal criteria one variable was removed from the factor analyses of the *self-directed learning* scale, two items were removed from the factor analyses of *self-reliance* and zero items were removed from the factor analysis of *digital literacy* and *proactive approach*.

For the factor analyses on the *self-directed learning* items four factors were found. These factors are the same as the original factor analyses of the self-directed learning items by Raemdonck (2006). The scales were named '1. Streven naar kenniswerk (Striving for knowledge)', '2. Ontwikkelingsmogelijkheden (Development opportunities)', '3. Loopbaantevredenheid (Career satisfaction)' and finally '4. Mobiliteitswens (Mobility desire)'. The self-directed learning scale has an cronbach's alpha of .746, suggesting that the items have an high internal consistency.

For the factor analyses on the *self-reliance* items four factors were found, which after analyses were dubbed '1. Vertrouwen in anderen ('trust in others')', '2. Relaties aangaan met anderen ('Relationships with others')', 3. Omgaan met conflicten/verandering ('Cope with conflicts / change') and finally 4. 'Anderen nodig hebben ('Needing other people')'. The self-reliance scale has an cronbach's alpha of .635.

For the factor analysis on the digital literacy and the proactive approach items one factor was found. The digital literacy scale had an cronbach's alpha of .702 and the proactive approach scale had an cronbach's alpha of .684.

Concluding, all the four scales showed an internal reliability higher than the necessary 0.5, with respectively a cronbach's alpha of .746 (self-directed learning), .635 (self-reliance), .702 (digital literacy) and .684 (proactive approach).

5. Data analysis

5.1 Data preparation

In order to reach a high degree of validity and reliability the data was prepared according to the aforementioned analyses in paragraph 4.6 with the support of the statistical program IBM SPSS version 23. To answer the research question correlation matrixes were executed followed by multiple regression analysis. Additionally, multiple chi-square analyses were performed. The chi-squares were used to analyze whether a respondent's personal characteristics were related to the use of an online versus an offline learning method for his or her studying.

5.2 Multicollinearity

Before performing the multiple regression analysis the variables in this research were checked on multicollinearity. Multicollinearity exists when there is a strong correlation between two or more predictors, which could turn out to be a problem because it can affect the standard errors of the independent variables. This counts especially for regression analysis with multiple predictors. If there is perfect collinearity, e.g. two predictors with a correlation coefficient of 1, between predictors it becomes impossible to obtain the unique estimates of the regression coefficients because there are an infinite number of combinations of coefficients that could work equally well (Field, 2013). Regarding the performed factor analysis this could translate into problems in determining the unique contribution of the factors that are highly correlated. One way of identifying multicollinearity is to scan a correlation matrix of the predicting variables and check to see if there are any variables which correlate very highly, e.g. above .80 or .90. The Spearman's Rho (ρ) was used to check multicollinearity since the (most) measurements came from a 5-point Likert scale (1 = Strongly disagree, 5= Strongly agree), indicating that the measurements came from ordinal scales. In table three the correlations between the different variables can be found. It is clear in here that no correlations above .80 can be found. Indicating that there is highly likely no multicollinearity.

Table 2. ***Spearman's Correlation Coefficient for the predicting variables***

Variable	N	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	281	41.78	12.40	1										
2. Striving for knowledge SDL	281	3.08	2.135	**-.19****	1									
3.Development opportunities SDL	281	3.71	2.00	**-.22****	**.51****	1								
4. Career satisfaction SDL	281	2.92	1.38	-.01	-.04	-.06	1							
5. Mobility desire SDL	281	3.78	1.19	-.07	**.41****	**.35****	.02	1						
6. Trust in others SR	281	2.50	2.43	.01	.05	.01	**.14***	-.05	1					
7.Relationships with others SR	281	3.54	1.45	**-.32****	**.22****	**.21****	-.05	.09	**-.16****	1				
8. Cope with conflict / change SR	281	3.17	2.51	**-.21****	-.02	-.00	.10	-.02	**.24****	.06	1			
9. Needing other people SR	281	2.41	1.93	**-.15****	-.02	.00	**.24****	-.00	.09	**.17****	**.28****	1		
10. Digital literacy	281	4.02	2.44	**-.14****	**.28****	**.38****	-.09	**.28****	**-.12***	.07	-.10	-.07	1	
11. Proactive approach	281	3.09	1.57	-.11	**.35****	**.45****	**-.16****	**.14****	.03	.11	.00	**-.17****	**.22****	1

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

In order to gain more confidence, the variance inflation factor (VIF) and the tolerance statistic were checked by performing a regression analysis for each variable where the option for collinearity diagnostics was selected. The VIF indicates whether a predictor has a strong linear relationship with the other predictor(s) (Field, 2013). The results did not show any proof of multicollinearity. According to Bowerman and O'Connell (1990) the VIF should not be greater than 10 and the average VIF should not be substantially greater than 1. The highest value found in this research was 1,494 which is not ***substantially*** greater than 1. Additionally, the tolerance statistic should not be lower than 0.2 because that would indicate a (potential) problem. The lowest tolerance statistic in this research is .669.

5.3 *To what extent do the personal factors of the online entrepreneur relate to the use of web 2.0 learning technologies*

The first question was *'to what extent do the personal factors of the online entrepreneur relate to the use of web 2.0 learning technologies'*. To answer this question multiple regression analysis was performed and the additional variables described in paragraph 2.2 were included.

5.3.1 The relation between the personal factors on the extent of web 2.0 learning technologies used.

In the first analysis correlation and multiple regression analyses were conducted to examine the relationship between the predicting variables and the outcome variable. The (nominal) variable *education* was computed to three levels of education (lower, medium and higher) and the variables belonging to *the use of web 2.0 learning technologies* were computed to one variable, namely *the overall score of web 2.0 learning technologies used*. In this multiple regression analysis the stepwise selection method was used. The stepwise selection involves analysis at each step to determine the contribution of the predicting variable entered previously in the equation. In this way it is possible to understand the contribution of the previous variables after another variable has been added. Variables can be retained or deleted based on their statistical contribution. Table three shows the descriptive statistics and table four shows the summary of the statistics, correlations and results from the regression analysis.

The multiple regression analysis showed that the age, the proactive approach and the digital literacy of the respondent accounted for 5% (3,9% adjusted) of the variance of the extent of the use of web 2.0 learning technologies used, $R^2 = .050$, $F(1,3) = 4.825$, $P < .000$. The statistics belonging to the analysis can be found in Table 3 (see Appendix C). The variable *digital literacy* had a significant positive regression with the extent of the use of web 2.0 learning technologies ($SR^2 = .135$, $\beta = - .106$, $t – 2.196$, $P < .05$). Furthermore, the variables *age* ($SR^2 = -.126$, $\beta = - .019$, $t - 2.120$, $P < .05$) and *proactive approach* ($SR^2 = - .162$, $\beta = - .179$, $t -2.653$, $P < .05$) had a significant negative regression with the extent of the use of web 2.0 learning technologies. The Durbin-Watson statistic is 2.033 which is close to two, meaning that the assumption of independent errors is met (Field, 2013).

The β-value tells the relationship between the independent variable and the outcome variable and whether the relationship is positive or negative. For this data only *digital literacy* has a positive relationship ($\beta = 0.106$) with the outcome variable *the extent of the use of web 2.0 learning technologies used*. So as the digital literacy of the respondent increases so does the use of web 2.0 learning technologies. The other two variables, *age* ($\beta = -.019$) and *proactive approach* ($\beta = -.179$), showed a negative relationship with the use of web 2.0 learning technologies. Meaning that the older the respondent or the higher the level of the proactive approach of the respondent the less he or she uses web 2.0 learning technologies for his or her learning.

In table 5 (see Appendix C) the anova of the analysis is shown. The anova tests whether the model is significantly better at predicting the outcome than using the mean as a 'best guess' (Field, 2013).

For the initial model the F-ratio is 4.917, $p < .027$. For the second the F-ratio is 4.759 ($p < .009$). Finally, the third model shows an F-ratio of 4.825 ($p < .003$). The results can therefore be interpreted as that the models significantly improved our ability to predict the outcome variable compared to not fitting the model.

5.3.2 The relation between the personal factors on the variety of web 2.0 learning technologies used.

The second question was '*to what extent do the personal factors of the online entrepreneur relate to the use of a variety of web 2.0 learning technologies'*. In the second analysis again correlation and multiple regression analyses were conducted to examine the relationship between the causal variables and the outcome variable. Though, the variables belonging to *the use of web 2.0 learning technologies* this time were computed **to the variety** in which the respondent makes use of web 2.0 learning technologies. Again the stepwise selection method was used. Table six shows the summary of the statistics, correlations and results from the regression analysis. The multiple regression analysis showed that the work experience (years working as an online entrepreneur) of the respondent accounted for 4,6 % (4,2% adjusted) of the variance in the overall score of the variety of web 2.0 learning technologies used, $R^2 = .046$, $F(1) = 12.880$, $P < .000$. The statistics belonging to the

analysis can be found in Table 6 (see Appendix C). The Durbin-Watson statistic is 2,001, which is close to two, meaning that the assumption of independent errors is met (Field, 2013).

For this analysis the work experience (β = -.034) of the online entrepreneur proved to be statistically significant with the variety of the use of web 2.0 learning technologies. The relation is a negative one, meaning that when the work experience of the online entrepreneur increases the variety of web 2.0 learning technologies used for his or her learning decreases. In table 7 (see Appendix C) the anova of the analysis is shown. In here the F-statistic is 12.880, which is greater than 1. The results can therefore be interpreted as that the models significantly improved our ability to predict the outcome variable compared to not fitting the model.

5.3.3 The influence of the personal factors on the variety of offline technologies used.

In the third analysis again correlation and multiple regression analyses were conducted to examine the relationship between the personal factors and the outcome variable. Though, the variables belonging to *the use of web 2.0 learning technologies* this time were computed to the variety in which the respondent makes use of **offline learning technologies**. Again the stepwise selection method was used. Table 8 (see Appendix C) shows the summary of the statistics, correlations and results from the regression analysis. The multiple regression analysis showed that the *work experience, proactive approach* and *the needing of others SR* accounted for 8,5% (7,5% adjusted) of the variance in the overall score of the variety of offline learning technologies used, R^2 = .085, F(1,3)=8.270, P < .000. The variables *work experience (SR^2 = .249 , β = .038, t 4.181, P < .05).*, *proactive approach* (SR^2 = .155 , β = .085, t 2.581, P < .05) and finally *the needing of others SR* (SR^2 = .131 , β = .059, t 2.153, P < .05) had a significant positive regression with the extent of the use of offline learning technologies. The Durbin-Watson statistic is 2,112 which is close to two, meaning that the assumption of independent errors is met (Field, 2013).

For this data the variables *work experience, proactive approach* and *needing of others SR* showed to have a positive relationship with the outcome variable *the variety of offline learning technologies used*. So as the *work experience (β = .038), proactive approach (β = .085)* or *the needing of others SR (β = .059)* of the respondent increases so does *the variety of offline learning technologies used*.

In table 9 (see Appendix C) the Anova of the analysis is shown. Because the F-statistic of the initial model is 15,060 and the F-statistic of the final model 8,270 the results can be interpreted as that the models significantly improved our ability to predict the outcome variable compared to not fitting the model.

5.4 The influence of the personal factors on the choice for an online versus an offline source for learning on four practical cases

In the fourth analysis the chi square were analyzed between the personal variables and the outcome variable for the practical cases. The variables belonging to *the use of web 2.0 learning technologies* computed to two separate options, namely 1) the respondent makes use of an online source for his learning or 2) the respondent makes use of an offline source for his learning. In total there were four practical cases with different subjects asking about the learning behavior of the respondent. Each practical case had the same follow-up question, namely '*If you do not find the solution you are looking for through your first method. How do you still find the necessary information*?'. Only the statistically significant relationships are shown below. The reason behind this is that there would otherwise be a numerous amount of information and tables that contribute nothing to the analysis (See Appendix C for the tables belonging to the analysis).

5.4.1 The influence of the personal factors on the choice for an online versus an offline source for learning about juridical knowledge

The current case is about juridical knowledge.

Age

The variable ***age*** was divided into two categories based on Prensky's (2001) theory of 'digital natives, digital immigrants'. The theory says that children born after 1980 are raised with digital technology and thus require a digital environment to excel in their learning in contrast with those born before 1980. Therefor the two categories exist out of 1) those born before 1980 and 2) those born after 1980.

The statistics, see table 10 (in Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. Table 10 shows that there is a higher number of digital natives counted than was expected as using an online source for his or her learning. Vice versa, a lower number of digital natives were counted than expected for using an offline source. The opposite counts for digital immigrants, the count of digital immigrants for using an online source for learning was lower than expected. For the offline source, a higher number of digital immigrants were counted than expected. The chi-square test helps to determine whether the observed counts differ enough from the expected counts. When this is true, the test is significant. Meaning that there is a significant correlation between the age of the respondent and the use of an online or offline source for the learning about juridical knowledge.

The asymptotic significance, see table 11 (in Appendix C), shows a .006 level, which is smaller than the alpha level of .05. Meaning that the variable age is statistical significant with whether a respondent makes use of an online or an offline source for learning about juridical knowledge.

The value of Phi, which is .163 (see table 12 in Appendix C). Phi is comparable to a correlation coefficient, it tells the size of the effect. The value of .163 is a small correlation coefficient (Pallant, 2010).

Work experience

Then the variable ***work experience (years working as an online entrepreneur)*** was examined. The variable work experience was split up in three categories, namely 1) 1-5 years of work experience, 2) 6-10 years of work experience and 3) > 10 years of work experience. Table 13 (see Appendix C) shows the counted and the expected counts of the variable education for using an online or an offline source for learning about juridical knowledge.

The statistics show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. Table 13 (see Appendix C) shows a higher number of respondents with 0 to 5 years of work experience who use an online source for the learning than expected. Vice versa, the table shows a lower number of respondents with 0 to 5 years of work experience than expected who use an offline source for learning. Additionally, the table shows a lower number than expected of respondents with 6 to 10 and 10 years and up years of work experience who use an online source for learning. Vice versa, the table shows that there is a higher number of people with 6 to 10 and 10 years and up years of work experience than expected who used an offline source for learning. These statistics show that there is a correlation between the level of work experience and the use of an online or an offline source for learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, which can be found in Table 14 (see Appendix C), shows a .001 level, which is smaller than the alpha level of .05. Meaning that the variable work experience is statistical significant with whether a respondent makes use of an online or an offline source for learning about juridical knowledge. The more years of work experience a respondent has the less he or she makes use of an online source for his learning about juridical knowledge.

In table 15 (see Appendix C), the value of Phi can be found. The value of Phi is .127, which is a small correlation coefficient (Pallant, 2010).

5.4.2 The influence of the personal factors of the respondent for using an online versus an offline source for learning about juridical knowledge (follow-up)

In the follow-up question respondents were asked what source they would use when they couldn't find the information they were looking for through the first method. Again chi squares were used to analyze the results on the questions.

Work experience

The statistics show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. Table 16 shows a higher number of respondents with 0 to 5 years of work experience who use an online source for the learning than expected. Vice versa, the table shows a lower number of respondents with 0 to 5 years of work experience than expected who use an offline source for learning. Additionally, the table shows a lower number than expected of respondents with 6 to 10 and 10 years and up years of work experience who use an online source for learning. Vice versa, the table shows a higher number of people with 6 to 10 and 10 years and up years of work experience than expected who used an offline source for learning. These statistics show that there is a correlation between the level of work experience and the use of an online or an offline source for learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance can be found in table 17 (see Appendix C). The table shows a asymptotic significance of .031, which is smaller than the alpha level of .05. Meaning that the variable work experience is statistical significant with whether a respondent makes use of an online or an offline source for learning about juridical knowledge. The more years of work experience a respondent has the less he or she makes use of an online source for his learning about juridical knowledge.

In table 18 (see Appendix C) the value of Phi can be found, which is .158. The value of .158 is a small correlation coefficient (Pallant, 2010).

Self-reliance – trust in others

Then the variables belonging to self-reliance were examined, namely *trust in others*, *relationships with others*, *cope with conflicts/change* and finally *needing others*. The variables were compared with the preference for an online or an offline source for learning. The variables *trust in others* and *cope with conflict/change* existed out of four questions with a five-point likert scale. The variable needing others had *three questions* and the variable *relationships with others* two. The mean of the variables in the chi squares below were divided by the number of questions it held and translated back to a five-point likert scale. After analysis it was found that only the variable *trust in others* was significantly related with the use for an online versus an offline source for learning. Therefor only the tables belonging to trust in others are shown below.

The statistics, see table 19 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance shows a .004 level, which is smaller than the alpha level of .05. Meaning that the variable *trust in others* is statistical significant with whether a respondent makes use of an online or an offline source for learning about juridical knowledge.

In table 21 (see Appendix C) the value of Phi can be found, which is .218. The value of .218 is a moderate correlation coefficient (Pallant, 2010).

5.4.3 The influence of the personal factors on the choice for an online versus an offline source for learning about search engine optimization knowledge

In the fifth analysis the chi square was analyzed between the personal variables and the outcome variable for the search engine optimization case. The variables belonging to *the use of web 2.0 learning*

technologies were computed to two separate options, namely 1) the respondent makes use of an online source for his learning or 2) the respondent makes use of an offline source for his learning. In total there were four practical cases with different subjects asking about the learning behavior of the respondent. Each practical case had the same follow-up question, namely 'If you do not find the solution you are looking for through your first method. How do you still find the necessary information?'. The current case is about search engine optimization.

Digital literacy

The variable digital literacy was compared with the preference for an online versus an offline source for learning. The variable digital literacy existed out of 5 questions. The mean of the variables in the chi squares below were divided by the number of questions it held and translated back to a five-point likert scale.

The statistics, see table 22 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, which can be found in table 23 (see Appendix C), shows a .017 level. This is smaller than the alpha level of .05. Meaning that the variable *digital literacy* is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization knowledge.

In table 24 (see Appendix C) the value of Phi can be found, which is .190. The value of .190 is a small correlation coefficient (Pallant, 2010).

5.4.4 The influence of the personal factors of the respondent for using an online versus an offline source for learning about search engine optimization knowledge (follow-up)

Age

In the follow-up question respondents were asked what source they would use when they couldn't find the information they were looking for through the first method. Again chi squares were used to analyze the results on the questions.

The statistics, see table 25 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, see table 26 (see Appendix C), shows a .028 level, which is smaller than the alpha level of .05. Meaning that the variable age is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization knowledge.

In table 27 (see Appendix C) the value of Phi can be found, which is .131. The value of .131 is a small correlation coefficient (Pallant, 2010).

Work experience

The statistics, see table 28 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, which can be found in table 29 in Apendix C, shows a .033 level. This is smaller than the alpha level of .05. Meaning that the variable work experience is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization (follow-up).

In table 30 (see Appendix C) the value of Phi can be found, which is .156. The value of .156 is a small correlation coefficient (Pallant, 2010).

Self-reliance – needing others

Then the variables belonging to self-reliance were examined, namely *trust in others*, *relationships with others*, *cope with conflicts/change* and finally *needing others*. The variables were compared with the preference for an online or an offline source for learning. The variables *trust in others* and *cope with conflict/change* existed out of four questions with a five-point likert scale. The variable needing others had *three questions* and the variable *relationships with others* two. The mean of the variables in the chi squares below were divided by the number of questions it held and translated back to a five-point likert scale. After analysis it was found that only the variable *needing others* was significantly related with the use for an online versus an offline source for learning. Therefor only the tables belonging to *needing others* are shown below.

The statistics, see table 31 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, which can be found in Table 32 (see Appendix C), shows a .023 level. The asymptotic significance is smaller than the alpha level of .05. Meaning that the variable *needing others* is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization knowledge (follow-up).

In table 33 (see Appendix C) the value of Phi can be found, which is .184. The value of .184 is a small correlation coefficient (Pallant, 2010).

5.4.3 The influence of the personal factors on the choice for an online versus an offline source for learning about search engine advertising knowledge

In the sixth analysis the chi square was analyzed between the personal variables and the outcome variable for the search engine advertising case. After analyzing the data for this case no statistically significant relations where found.

5.4.4 The influence of the personal factors on the choice for an online versus an offline source for learning about search engine advertising knowledge (follow-up)

In the follow-up question respondents were asked what source they would use when they couldn't find the information they were looking for through the first method. Again chi squares were used to analyze the results on the questions.

Age

The statistics, see table 34 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, see table 35 (see Appendix C), shows a .009 level. This is smaller than the alpha level of .05. Meaning that the variable age is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization knowledge.

In table 36 (see Appendix C) the value of Phi can be found, which is .155. The value of .155 is a small correlation coefficient (Pallant, 2010).

5.4.5 The influence of the personal factors on the choice for an online versus an offline source for learning about ICT/technical knowledge

In the sixth analysis the chi square was analyzed between the personal variables and the outcome

variable for the ICT/technical knowledge case.

Age

The statistics, see table 37 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, which can be found in table 38 (see Appendix C), shows a .004 level. This is smaller than the alpha level of .05. Meaning that the variable age is statistical significant with whether a respondent makes use of an online or an offline source for learning about ICT/technical knowledge.

In table 39 (see Appendix C) the value of Phi can be found, which is -.172. The value of -.172 is a small correlation coefficient (Pallant, 2010).

Self-directed learning – development opportunities

Then the variables belonging to self-directed learning were examined; *striving for knowledge*, *development opportunities*, *career satisfaction* and *mobility desire*. The variables were compared with the preference for an online or an offline source for learning. The variables *striving for knowledge* and *development opportunities* existed out of four questions with a five-point likert scale. The variable *career satisfaction* had three questions and the variable *mobility desire* two. The mean of the variables in the chi squares were divided by the number of questions it held and translated back to a five-point likert scale. After analysis it was found that only the variable *development opportunities* was significantly related with the use for an online versus an offline source for learning. Therefor only the tables belonging to *development opportunities* are shown below.

The statistics, see table 40 (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, see table 41 (see Appendix C), shows a .004 level. This is smaller than the alpha level of .05. Meaning that the variable age is statistical significant with whether a respondent makes use of an online or an offline source for learning about ICT/technical knowledge.

In table 42 (see Appendix C) the value of Phi can be found, which is .159. The value of .159 is a small correlation coefficient (Pallant, 2010).

Digital literacy

Then, the variable digital literacy was compared with the preference for an online versus an offline source for learning. The variable digital literacy existed out of 5 questions. The mean of the variables in the chi squares below were divided by the number of questions it held and translated back to a five-point likert scale.

The statistics, see table 43 in (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, see table 44 in (see Appendix C), shows a .057 level. This is smaller than the alpha level of .05. Meaning that the variable *digital literacy* is statistical significant with whether a respondent makes use of an online or an offline source for learning about search engine optimization knowledge.

In table 45 in (see Appendix C) the value of Phi can be found, which is .164. The value of .164 is a small correlation coefficient (Pallant, 2010).

5.4.4 The influence of the personal factors on the choice for an online versus an offline source for learning about ICT/Technical knowledge (follow-up)

In the follow-up question respondents were asked what source they would use when they couldn't find the information they were looking for through the first method. Again chi squares were used to analyze the results on the questions.

Work experience

The statistics, see table 46 in (see Appendix C), show that there is a difference between the number of the respondents which were counted and the number of the respondents which were expected to be counted as using an online or an offline source for the learning. The chi-square test can be used to see whether this correlation is significant.

The asymptotic significance, see table 47 (see Appendix C), shows a .011level, which is smaller than the alpha level of .05. Meaning that the variable work experience is statistical significant with whether a respondent makes use of an online or an offline source for learning about ICT/technical knowledge.

In table 48 (see Appendix C) the value of Phi can be found, which is .180. The value of .180 is a small correlation coefficient (Pallant, 2010).

6. Conclusion/discussion

The main goal of this study was to answer the research question: *To what extent do the personal factors of the online entrepreneurs' relate to the use of web 2.0 learning technologies?* and the sub-goal was to answer the question '*to what extent are the personal factors of the online entrepreneur' related to the use of a variety of web 2.0 learning technologies?*'. Based on a review of the extant literature, several key variables were identified. Using multiple validated questionnaires a new instrument was created to measure the extent of the influence of the personal characteristics of the participants on the use and variety of the use of web 2.0 learning technologies. Data was gathered during a period of four weeks resulting in 281 completed questionnaires. Based on the data from exploratory factor analysis on the items, one item from self-directed learning and two items from self-reliance were excluded due to inadequate factor loadings.

In this section the discussion and conclusion are given of the results from the study. Furthermore, the findings are discussed in relation with other studies. At the end a reflection is given on the possible limitations of the study as well as the implications of the study and the recommendations for future research.

6.1 The influence of the personal factors on the extent of web 2.0 learning technologies used

It was hypothesized that the personal factors of the online entrepreneur would be related to the extent of web 2.0 learning technologies used. Results of the multiple regression analysis showed that *the age*, *the proactive approach* and *the digital literacy* of the respondent contributed to the extent of web 2.0 learning technologies used.

Firstly, the higher *age* of the respondent proved to be statistical significant with a lower number of web 2.0 learning technologies used. Prensky (2001) already indicated that younger respondents, the digital natives, where the first generation to grow up with new technology which in his words 'changed the world fundamentally'. Among those new technologies are computers, video games, digital music players and cell phones. According to Prensky (2001) the people who grow up with these technologies think and process information differently than their predecessors (the digital immigrants, those born before 1985). Other research (Sivarajah, Weerakkody & Irani, 2015; Dubie, 2008) supported this and underpinned that the world of the 'digital natives' and the 'digital immigrants' are two worlds apart. In the current research only a small effect could be noticed between the age and the extent of web 2.0 learning technologies used. The reason behind this could be that the population exists out of online entrepreneurs, e.g. people who work and are familiar with the digital environment.

Secondly, a negative relation was found between having a higher level of *proactive approach* and the use of a higher number of web 2.0 learning technologies. The negative relation between the two factors is surprising, because research has shown that the proactive approach of participants ensures personal initiative in various activities and situations (Seibert et al, 2001). One would therefore expect a positive relation between the proactive approach of the participant and the extent of web 2.0 learning technologies used. An explanation for the negative relation between the respondent's proactive approach and the use of a higher number of web 2.0 learning technologies can be the difference between being accustomed to use, search for and remember information. With the development of web 2.0 it became possible to search for information in a reactive way ('when it is needed') rather than in a proactive way, e.g. without all the digital information being accessible all the time someone needed to poses much more basic knowledge for professional functioning. Therefore it can also be discussed that older people are more used to being proactive, whereas younger people are more used to being reactive. This is partly in line with the research from Prensky (2001) in which is stated that the digital immigrants have few appreciation for the digital skills that the digital natives have. They rather learn in the way they have always done, namely slow, step-by-step, one-thing-at-the-time, individually and seriously (Prensky, 2001). This explains that the younger respondents rather make use of web 2.0 learning technologies, whereas their older counterparts rather use offline learning technologies such as printed books. This then again would explain the different worlds in which the 'digital natives' and the 'digital immigrants' are operating.

Furthermore, the *digital literacy* of the respondent showed to significantly contribute to the number of web 2.0 learning technologies used. Since digital literacy can be seen as the skills which are necessary to perform and solve problems in the digital atmosphere, the significant correlation between the two factors is not unforeseen.

6.2 The influence of the personal factors on the variety of web 2.0 learning technologies used

Secondly it was hypothesized that the personal factors of the online entrepreneur would be related to the variety of web 2.0 learning technologies used. Results of the multiple regression analysis showed that the *work experience (years working as an online entrepreneur)* contributed to the variety of the use of web 2.0 learning technologies. The positive correlation goes against what was expected in the hypothesis of this research.

A possible explanation behind the positive correlation between *work experience (years work as an online entrepreneur)* and the variety of the use of web 2.0 learning technologies can be the matureness of the organization the entrepreneur leads. In the beginning phase of the organization (also called 'start-up') one might require fewer tools for professional functioning than when the organization becomes more mature. When the organization becomes more mature the entrepreneur highly likely needs to enhance his or her knowledge, take on more responsibilities and deal with more complex tasks, forcing them to adopt new web 2.0 learning technologies which support them in their work. Additionally, Hoti (2015) stated that in comparison with large organizations, small businesses have been slow in the adaptation of web 2.0 technologies. According to Thong (1999) this is because large organizations can take the greater risks that are related with the adaptation of innovations, mainly because large organizations have more resources and greater economies of scale. The size of the organization is relevant with the years of work experience since it takes time to build and maintain a business.

6.3 The influence of the personal factors on the variety of offline technologies used

In the third analysis correlation and multiple regression analyses were conducted to examine the relationship between the personal factors and the variety in which the respondent makes use of offline learning technologies. The analysis showed that the *work experience (years working as an online entrepreneur)*, *the proactive approach* and *the needing of others* contributed to the variety of the use of offline learning technologies.

Firstly, *the work experience* proved statistically significant with the variety of offline learning technologies used. Just as with a higher variety of digital learning technologies used, this correlation can be explained by the matureness of the organization. Additionally, older respondent proved to be less digital skilled in this research. Since the years of work experience and the age of the respondent go hand-in-hand it explains the significant correlation with the variety of offline learning technologies used.

Secondly, *the proactive approach* of the respondent proved to be statistically significant correlated with the variety of offline learning technologies being used. In paragraph 6.1 a possible explanation for a significant correlation between the proactive approach of the respondent and the use of more traditional learning methods was given. An older person needed to poses much more basic knowledge for professional functioning, because they could not look up information as easily as with the technology of nowadays. The Internet made it possible to have limitless access to information from anyplace and anytime. Therefore it could be possible that technology decreased the need for memorization and thereby changed the way someone is learning from proactive to more reactive.

Finally, *the needing of others* proved to be statistically significant with the variety of offline learning technologies being used. While this on first sight seems to be contrasting with the statistically significant correlation between proactive approach and the variety of offline learning technologies used, this doesn't necessary have to be so. In order to be proactive you need to get involved with other people, e.g. understand that you are part of the system and that you influence – and are being influenced – by other people. Research (Nestojko, Bui, Kornell & Bjork, 2014) additionally showed that people learn better and recall more when they think they will soon need to teach others the material. This indicates that learners often need to be guided in finding strategies for optimal learning.

6.4 The choice for an online versus an offline source for learning about specific topics

In the fourth analysis chi squares were performed based on a variety of practical questions. The respondents could answer that they either made use of 1) an online learning source or 2) of an offline source for his or her learning. In total four practical questions were asked about juridical, search engine optimization, search engine advertising and technical/ICT themes. Each practical question had a follow-up questions asking what the respondent '*would do if they did not find what they were looking for through the first method'*.

The influence of the personal factors on the choice for an online versus an offline source for learning about juridical knowledge

The variables *age* and *work experience* proved to be statistically significant with the choice for an online versus an offline source for learning about juridical knowledge. The statistics showed that younger respondents more often use an online source for learning about juridical knowledge than their older counterparts. This is line with the theory from Prensky (2001) about digital natives versus digital immigrants. Additionally, the statistics showed that as the level of work experience increases so does the choice for an offline source for learning about juridical knowledge. Again, this is line with the theory from Prensky (2001) about digital natives versus digital immigrants. When a respondent has more work experience he or she is likely older than when a respondent has less work experience, therefore belonging to the 'digital immigrants' rather than the 'digital natives'.

The influence of the personal factors on the choice for an online versus an offline source for learning about juridical knowledge – follow-up question

The follow-up question asked respondents what method for finding information they used when they could not find the information through the first method. The variables *work experience* and *trust in others* proved to be statistically significant with the follow-up question. The statistics belonging to the variable work experience showed that younger respondents more often use online sources for their learning than their older counterparts. Again this is in line with the theory from Prensky (2001).

The statistics belonging to the variable *trust in others* showed a higher number of respondents who disagreed or were neutral about their trust in others than expected, which counts for both the groups of the respondents who use an online tool for their learning and the respondents who use an offline tool for learning about juridical knowledge. An explanation can be that entrepreneurs are used to being competitive, which according to research influences their trust in others (Keck & Karelaia, 2011). When it comes to competition the general idea is that one can only succeed if all others fail. It is only natural that this idea hurts the ability to have trust in others. Another explanation can be that there is a lack of clarity when it comes to juridical knowledge. Not everything can be laid down in rules and regulations and more often than not practice is different from theory. This lack of clarity can hurt the trust in others when it comes to learning about juridical knowledge.

The influence of the personal factors on the choice for an online versus an offline source for learning about search engine optimization

The variable *digital literacy* proved to be statistically significant with the choice for an online versus an offline source for learning about search engine optimization. The statistics showed a lower number of respondents which were neutral about their digital literacy than expected for using an online source for their learning. Furthermore the table showed a higher number of respondents which were neutral about their digital literacy than expected for using an offline source for learning.

The influence of the personal factors on the choice for an online versus an offline source for learning about search engine optimization – follow-up question

The variables *age*, *work experience* and *needing others SR* proved to be statistically significant with the follow-up question about make use of an online or an offline source for learning about search engine optimization. The follow-up question asked respondents what method for finding information they used when they could not find the information through the first method.

Firstly, the analysis showed a higher number of digital natives than expected as using an online technology for the learning. The other way around, the table showed a lower number of digital natives than expected as using an offline technology for learning. When analyzing the group of digital immigrants the data showed a lower number of the group as using an online technology for the learning then which was expected. Additionally, the data showed a higher group of digital immigrants which were using an offline technology for the learning than expected. Again this is in line with the theory from Prensky (2001).

Secondly, when analyzing the variable *work experience* with the use for an online versus an offline technology for learning the data showed that a higher number of respondents with 0 to 5 years of work experience were using an online technology than expected. Additionally, there were a lower number of

respondents with 0 to 5 years of work experience than expected which used an offline source for learning. Furthermore, the data showed that in the group of respondents with more than 10 years of work experience the opposite happened. The data showed a lower number of respondents with more than 10 years of work experience than expected for using an online source for learning. Additionally, there were a higher number of respondents with more than 10 years of work experience than expected for using an offline technology for learning. Since work experience and age go hand-in-hand the results are expected.

When analyzing the variable *needing others SR* the data showed that a higher number of people which disagreed with their needing of others made use of an online technology for learning than which was expected. Additionally, a lower number of people which disagreed with their needing of others than expected made use of an offline technology for learning.

It is surprising that a higher number of people which disagreed with their needing of others made use of an online technology for learning. Previous research showed that people can learn more easily when they observe and imitate others, which is the basis of the social learning theory (Bandura, 1971). Web 2.0 learning technologies made it possible to interact *with anyone*, *from anyplace* and *at any time* and therefore it fits rather well with the social learning theory. A web 2.0 learning technology such as watching a YouTube video of someone explaining the basics of Google Adwords, an online advertising program, fits with the social learning theory in the way that we learn through observation. Offline learning technologies, such as reading a book, can be seen as more isolated learning experiences.

Furthermore, the data showed a lower number of respondents using an online technology for learning than which was expected which were neutral about their needing of others. Finally, the data showed a bigger number of respondents which made use of an offline technology for their learning than was expected for being neutral about their needing of others.

The influence of the personal factors on the choice for an online versus an offline source for learning about search engine advertising

No variables proved to be statistically significant the choice for an online versus an offline source for learning about search engine advertising.

The influence of the personal factors on the choice for an online versus an offline source for learning about search engine advertising – follow-up question

The variables *age* proved to be statistically significant with the follow-up question about make use of an online or an offline source for learning about search engine advertising. The data showed that a higher number of digital natives made use of an online technology for learning than expected. Additionally, a lower number of digital natives than expected made use of an offline technology for learning. Furthermore, the data showed a lower number of digital immigrants than expected which made use of an online technology for learning. Finally, a higher number of digital immigrants than expected made use of an offline technology for learning. Again this is in line with the theory from Prensky (2001).

The influence of the personal factors on the choice for an online versus an offline source for learning about ICT/technical knowledge

The variables *age*, *development opportunities SDL* and *digital literacy* proved to be statistically significant with the choice for an online or an offline source for learning about ICT/Technical knowledge.

Firstly, the data showed that a lower number of digital natives than expected made use of an online technology for learning about ICT/technical knowledge. Additionally, a higher number of digital natives showed to be using an offline technology for learning about ICT/Technical knowledge. This is a surprising find, because all the other analyses showed that the digital natives preferred to use an online source for learning. Though, an explanatory reason could be the depth of knowledge needed from the source. It would not be surprising that digital natives have more general ICT/technical knowledge than digital immigrants. Therefore digital natives operating as online entrepreneurs could have a library with code books about HTML, Javascript and PHP whereas the digital immigrants might hire someone to help them with ICT/technology. Though this is an assumption and whether this holds true could be analyzed in other research. The data of the digital immigrants showed that a higher number than expected made use of an online source for learning than expected. Finally, the

data showed a lower number of digital immigrants than expected which made use of an offline source for learning.

Secondly, the data belonging to the chi square *development opportunities SDL* with the source for learning. The data for the groups which were 'neutral' and 'agreed' showed different results than expected. Firstly, the group which was neutral showed a lower number than expected for using an online source for learning. Additionally, the group which was neutral showed a higher number than expected for using an offline source for learning. Furthermore, there was a higher number of respondents which were neutral than expected for using an online source for learning. Finally, the data showed a lower number of respondents which made use of an offline technology for learning than expected.

Finally, the data belonging to the variable digital literacy with the choice for an online versus an offline technology for learning. The data for the groups which were 'neutral', 'agreed' and 'strongly agreed' showed different results than expected. Firstly, the group which was neutral showed a lower number than expected for using an online technology for learning. Furthermore the group which was neutral showed a higher number than expected for using an offline technology for learning. Secondly, the group which agreed showed a higher number than expected for using an online technology for learning. Furthermore the group which agreed showed a lower number than expected for using an offline technology for learning. Finally, the group which strongly agreed showed a lower number than expected for using an online technology for learning and a higher number than expected for using an offline technology for learning.

The influence of the personal factors on the choice for an online versus an offline source for learning about ICT/technical knowledge – follow-up question

The variables *work experience* proved to be statistically significant with the follow-up question about making use of an online or an offline source for learning about ICT/Technical knowledge. All three the groups (0-5 years of work experience, 6-9 years of work experience and > 10 years of work experience) showed different data than expected. Firstly, the group with 0 to 5 years of work experience showed a higher number of respondents which made use of an online technology for learning than expected. The group of respondents with 0 to 5 years of work experience showed a lower number than expected for using an offline technology for learning. Furthermore, the groups of 6 to 9 years of work experience and the group of 10 years and up of work experience showed a lower number of respondents which made use of an online technology for learning than expected. Finally, these two groups showed a higher number of respondents which made use of an offline technology for learning than expected. The results are not surprising since the work experience and the age of the respondent go hand-in-hand. Therefore the theory of Prensky (2001) seems to explain the results of this analysis as well.

6.5 Conclusion

In general, it can be stated that this study showed that certain personal factors influence the extent and the variety of the use of web 2.0 learning technologies by online entrepreneurs. The main outcome is that the *age*, *work experience (years working as an online entrepreneur)*, *proactive approach* and the *digital literacy* of the respondent relates to the extent and the variety of the of web 2.0 learning technology. Though, the results indicate that it is not solely enough to have access to web 2.0 learning technologies to use them. This observation is more pronounced among older respondents. This is highly likely because web 2.0 is a new field of study and guidance is needed for effective learning when people are unfamiliar with web 2.0 learning technologies. Since younger people integrate technology in their everyday life this enhances their technical skills and therefore they make more use of web 2.0 learning technologies.

It can be seen as surprising that certain factors such as the self-reliance and the level of self-directed learning of the respondent are not statically significantly correlated with the extent and the variety of the use of web 2.0 learning technologies. Furthermore, the found correlations in this research were relatively small which can be seen as surprising as well. Though, this supports the idea that it is not enough to just provide the technology and just hope that people will use them. Organizations with the wish to develop web 2.0 learning technologies need to research how they can effectively reach their (potential) users and help them assist in knowledge sharing. Ways that can help in this regard are incentives, integrating personal training and building recognition for the effects that web 2.0 learning technologies can have on learning.

6.6 Limitations, implications and recommendations for future research

There are still some more interesting factors which can be researched. Additionally, there are some limitations found within this research which give room for future improvements. Firstly, in this study use was made of a survey and a cross-sectional study. Using solely a survey method limited the depth of the research. In future research it is therefore recommended to additionally use interviews to survey the experiences of participants and the instructors with web 2.0 learning technology. Additionally, it would be beneficial to research how web 2.0 learning technologies and offline learning technologies work together to improve the learning process of the participant.

The author of this research developed four practical cases in this research to investigate the extent and the variety of the use of web 2.0 learning technologies of the participants. These factors were not used in previous research, meaning that these factors are experimental. It is recommended in future research to see if the found results of this research would also count when another method of research would be used. Other methods of research could be real-life research in how web 2.0 learning technologies are used in different contexts, including higher education, corporate settings and the comparison and contrast of the findings. Additionally, this study was conducted among online entrepreneurs. It could be interesting to conduct the same research under more traditional, offline working, entrepreneurs and compare the findings with the results of this study. Furthermore, the chi square analyses which were used to analyze the difference between the online and the offline group could be analyzed further. In this research the statistical significance of a chi square was checked. However, a further analyze could research which group in the chi square was exactly statistical significant.

The variables self-directed learning and self-reliance did not proof to be statistically significant in this research. It is recommended to get more insight if this would also count when one would use a combination of a survey with real-life research. A better understanding of how the individual makes use of web 2.0 learning technologies could be off added value. Finally, research can be performed to see what mechanisms of web 2.0 learning technology help the user in becoming a better learner.

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Appendix A: Survey items

Jelmer van der Linden, 2017

Here below follow the scales and corresponding items which were used in this research. Questions six, seven, eight and ten were items with a 5-point Likert scale, in which 1 = completely disagree and 5 = completely agree.

Algemene vragen

1. Geslacht: Bent u een man of een vrouw?

    - Man
    - Vrouw

2. Leeftijd: Wat is uw leeftijd?

    -

3. Werkervaring: Hoeveel jaren bent u reeds werkzaam als internet ondernemer?

    -

4. Opleiding: Wat is het hoogste niveau opleiding dat u heeft afgemaakt?

    Als u nog steeds studeert, wat is dan het hoogst behaalde diploma tot nu toe?

    - Geen
    - Basisonderwijs
    - Lager beroepsonderwijs (LBO, VMBO)
    - Middelbaar algemeen voorbereidend onderwijs (MAVO)
    - Middelbaar beroepsonderwijs (MBO)
    - Hoger algemeen voorbereidend wetenschappelijk onderwijs (HAVO, VWO)
    - Hoger beroepsonderwijs (HBO)
    - Wetenschappelijk onderwijs (WO)
    - Master (HBO)
    - Master (WO)
    - PHD

5. Werkstatus

Deze vraag is multiple choice. Mocht u bijvoorbeeld een student internet ondernemer zijn dan kunt u zowel de keuze student als de keuze eigen baas selecteren.

- In loondienst
- Eigen baas
- Geen werk, op zoek naar werk
- Geen werk, niet op zoek naar werk
- Een huisvrouw/man
- Een student
- Met pensioen
- Arbeidsongeschikt

Persoonlijke factoren

6. Zelfredzaamheid

Het concept van zelfredzaamheid kan worden gedefinieerd als het hebben van de vertrouwen in uzelf om de eigen zaken te regelen zonder daarbij om hulp te vragen. Hieronder volgen enkele vragen welke u kunt beantwoorden vanuit een schaal van 'zeer mee oneens' tot 'zeer mee eens'.

6.1 Ik vind het moeilijk om werk uit handen te geven aan iemand anders.

6.2 Ik heb collega’s of ondergeschikten nodig om mij zeker te voelen over mijn werk.
6.3 Er zullen altijd mensen zijn die mij ondersteunen op het werk wanneer ik ze nodig heb.
6.4 Ik breng regelmatig en gemakkelijk tijd door met andere mensen tijdens het werk.
6.5 Het ontwikkelen van hechte relaties met collega’s zal een averechts effect op mijn werk hebben.
6.6 Ik probeer altijd te voorkomen dat er conflicten ontstaan op het werk.
6.7 Ik vertrouw erop dat ten minste twee andere collega’s het beste met mij voor hebben.
6.8 Ik raak erg overstuur en verstoord als ik een conflict met iemand heb op het werk.
6.9 Ik vermijd het om afhankelijk te worden van andere mensen omdat ik benauwd wordt van nauwe betrekkingen.
6.10 Ik heb vaak het gevoel dat collega’s andere motieven en intenties hebben dan ze zeggen te hebben.
6.11 Ik heb frequent feedback van mijn baas nodig om zeker te zijn dat ik goed bezig ben met mijn werk.
6.12 Vragen om hulp van collega’s maakt me behoeftig en ik hou daar niet van.
6.13 Ik heb een gezond, gelukkig leven thuis.
6.14 Ik raadpleeg altijd collega’s wanneer ik belangrijke beslissingen maak.
6.15 Het is moeilijk voor mij om mijn huis of mijn baan stop te zetten voor een ander huis of een andere baan.

7. Proactieve aanpak

Het concept van 'pro-activiteit' of een 'pro-actieve benadering' kan worden gedefinieerd als het anticiperen op mogelijke kansen of bedreigingen in plaats van het wachten tot het laatste moment om tot actie over te gaan. Hieronder volgt een reeks van vijf vragen die vanuit een 'zeer mee oneens' tot een 'zeer mee eens' kan worden beantwoord.

7.1 Ik ben altijd sterk gemotiveerd in het aangrijpen van bruikbare verandering.
7.2 Ik vind niets opwindender dan het omzetten van mijn ideeën naar realiteit.
7.3 Als ik iets zie dat ik niet leuk vind dan zoek ik naar een oplossing om het beter te maken.
7.4 Als ik in iets geloof dan ga ik er volledig voor, ook wanneer de kans klein is dat het me lukt.

8. Digitale geletterdheid

Het concept van 'digitale geletterdheid' kan worden omschreven als het bezitten van de kennis, vaardigheden en houding van een individue op het digitale vlak (c.q. smartphones, tablets en computers). Hieronder volgt een reeks van vijf vragen die vanuit een 'zeer mee oneens' tot een 'zeer mee eens' kan worden beantwoord.

8.1 Het is eenvoudig voor mij om online de informatie te vinden waar ik naar zoek.
8.2 Ik voel me zelfverzekerd in mijn beoordeling of een website vertrouwd kan worden.
8.3 Ik vergelijk in het algemeen verschillende websites om te beslissen of informatie waar is.
8.4 Ik weet wanneer ik wel en wanneer ik niet informatie welke ik bezit online moet delen.
8.5 Ik voel me zelfverzekerd in het schrijven van reacties op een blog, website of forum.

Contextuele factoren

9.1 Doet u alles voor de webwinkel zelf of besteed u ook zaken (zoals bijvoorbeeld de marketing) uit? Geef bij de volgende onderwerpen aan of u het uitbesteed aan anderen (de optie ja) of het zelf uitvoert (de optie nee).

- ❒ Ik besteed de marketing uit
- ❒ Ik besteed mijn administratie uit
- ❒ Ik besteed het beheer van mijn webwinkel uit
- ❒ Ik besteed de ICT van mijn webwinkel uit
- ❒ Ik besteed de fulfillment van mijn webwinkel uit.

9.2 Omvang webwinkel
Hoeveel uren worden er in totaal gedraaid per week door uw personeel binnen uw bedrijf?

❒

9.3 Wat is/zijn de branche(s) waarin de webwinkel actief is? *

- ❒ Babybenodigdheden
- ❒ Cadeau's, gadgets en bloemen
- ❒ Dienstverlening
- ❒ Dieren
- ❒ Elektronica
- ❒ Erotiek
- ❒ Feest-en seizoensartikelen
- ❒ Financieel
- ❒ Horeca en catering
- ❒ Huis en tuin
- ❒ Kantoor-en schoolartikelen
- ❒ Kleding, accessoires en brillen
- ❒ Levensmiddelen
- ❒ Media, muziek en entertainment
- ❒ Opleiding en coaching
- ❒ Overig
- ❒ Reizen
- ❒ Sport en hobby
- ❒ Telecom
- ❒ Uiterlijk, verzorging en gezondheid
- ❒ Vervoer en transport

10. Self-directed learning (zelf-sturend leren)

Het zelf gestuurd leren beschrijft een proces waarbij individuen het initiatief nemen om tot realisatie over te gaan van (opgedragen en zelf ontwikkelde) doelstellingen. Hieronder volgt een reeds van 14 vragen die vanuit een 'zeer mee oneens' tot een 'zeer mee eens' beantwoord kunnen worden.

1. Ik ben altijd op zoek naar betere manieren om mijn werktaken uit te voeren.
2. Ik munt uit in het opmerken van kansen tot leren.
3. Als het nodig is om bij te leren om mijn doelen te bereiken, dan doe ik dat graag. (b)
4. Als ik wil bijleren voor mijn baan, zal geen hindernis me weerhouden. (c)
5. Een moeilijk op te lossen werktaak, houdt me niet tegen. (c)
6. Ik ben voortdurend op zoek naar nieuwe manieren om de uitvoering van mijn taken te verbeteren. (a)
7. Ik merk een goede kans tot leren op, lang voor anderen dat doen. (a)
8. Ik denk na over de manier waarop de dingen die ik leer, passen in de plannen die ik heb voor mezelf. (a)
9. Ongeacht de kansen: als ik een leeractiviteit wil ondernemen voor mijn baan, maak ik dat waar. (b)
10. Als ik een leeractiviteit onderneem, verzeker ik mij ervan dat deze aansluit bij wat ik wil leren voor mijn loopbaan. (a)
11. Als ik voor een moeilijk uit te voeren werktaak sta, blijf ik er van af. (neg. item, c)
12. Als ik wil bijleren voor mijn baan, kan ik altijd wel een manier vinden om het te leren. (b)
13. Als ik niet duidelijk weet wat de toekomst brengt, maak ik geen plannen tot leren. (neg item, a)

Web 2.0 Learning Technologies

Juridisch

Een klant klaagt over een product dat al na 4 maanden kapot is. Je twijfelt wat hierin je rechten zijn. Waar vind je de benodigde informatie?

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube

- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

Je vind de oplossing niet via je eerste zoekmethode. Hoe vind je alsnog de benodigde informatie.

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

SEO

Plotseling daalt mijn website in Google. Ik heb geen idee waar dit aan ligt. Hoe achterhaal je het probleem?

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

Je vind de oplossing niet via je eerste zoekmethode. Hoe vind je alsnog de benodigde informatie?

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

Adverteren

Er is een nieuwe vergelijkingssites die zich specifiek richt op jouw producten. Je wilt graag op deze website adverteren. Je dient hier te bieden op advertentieruimte. Je weet niet wat een normaal biedbedrag is. Hoe achterhaal je wat je gaat bieden.

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

Je vind de oplossing niet via je eerste zoekmethode. Hoe vind je alsnog de benodigde informatie.

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)

- Ik stel een vraag op een forum
- Anders, namelijk .....

Technisch/ICT

Je webwinkel heeft een technisch probleem. Klanten krijgen soms een foutmelding bij het plaatsen van een bestelling. Hoe los je dit probleem op?

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders,namelijk .....

Je vind de oplossing niet via je eerste zoekmethode. Hoe vind je alsnog de benodigde informatie.

- Zoeken via Google
- Ik vind informatie via blogs
- Ik zoek op Youtube
- Ik vraag een bekende
- Ik zoek offline (bijvoorbeeld in boeken)
- Ik stel een vraag op een forum
- Anders, namelijk .....

Appendix B: Results factor analysis

Jelmer van der Linden, 2017

Pattern and structure matrix for PAF analysis with Promax Rotation of 4 Factor Solution of the self-learning learning items

	Factor			
Item	**1. Streven naar kenniswerk**	**2. Ontwikkelingsmogelijkheden**	**3. Loopbaantevredenheid**	**4. Mobiliteitswens**
SDL.4 Als ik wil bijleren voor mijn baan,dan zal geen hindernis me weerhouden.	.815			
SLD.9 Ongeacht de kansen: als ik een leeractiviteit wil ondernemen voor mijn baan, maak ik dat waar.	.592			
SLD.3 Als het nodig is om bij te leren om mijn doelen te bereiken, dan doe ik dat graag.	.517			
SLD.12 Als ik wil bijleren voor mijn baan, kan ik altijd wel een manier vinden om het te leren.	.397			
SLD.2 Ik munt uit in het het opmerken van kansen tot het leren.		.767		
SLD. 6 Ik ben voortdurend op zoek naar nieuwe manieren om de uitvoering van mijn taken te verbeteren		.627		
SLD. 7 Ik merk een goede kans tot leren op lang voordat anderen dat doen.		.597		
SLD. 1 Ik ben altijd op zoek naar betere manieren om mijn werktaken uit te voeren.		.528		
SLD. 11 Als ik voor een moeilijk uit te voeren werktaak sta dan blijf ik er van af.			-.740	
SLD.12 Als ik niet duidelijk weet wat de toekomst brengt, maak ik geen plannen tot leren.			-.584	
SLD.5 Een moeilijk op te lossen werktaak, houdt me niet tegen.			.380	
SLD.10 Als ik een leeractiviteit onderneem, verzeker ik mijzelf ervan dat deze aansluit bij wat ik wil leren voor mijn loopbaan.				.742
SLD.8 Ik denk na over de manier waarop ik dingen leer, passen in de plannen die ik heb voor mijzelf.				.334

Pattern and structure matrix for PAF analysis with Promax Rotation of 4 Factor Solution of the variable self-reliance

		Factor		
Item	**1. Vertrouwen in anderen**	**2. Relaties aangaan met anderen**	**3. Omgaan met conflicten/verandering**	**4. Anderen nodig hebben**
ZR. 9 Ik vermijd het om onafhankelijk te worden van anderen omdat ik benauwd word van nauwe betrekkingen	.604			
ZR.12 Vragen om hulp van collega's maakt me behoeftig en ik hou daar niet van.	.602			
ZR.10 Ik heb vaak het gevoel dat collega's andere motieven en intenties hebben dan ze zeggen te hebben.	.491			
ZR. 5 Het ontwikkelen van hechte relaties met collega's zal een averechts effect op mijn werk hebben.	.333			
ZR. 3 Er zullen altijd mensen zijn die mij ondersteunen op het werk wanneer ik ze nodig heb.		.717		
ZR. 4 Ik breng regelmatig en gemakkelijk tijd door met andere mensen tijdens het werken.		.584		
ZR. 6 Ik probeer altijd te voorkomen dat er conflicten ontstaan op het werk.			.571	
ZR. 8 Ik raak erg overstuur en verstoord als ik een conflict met iemand heb op het werk.			.469	
ZR. 7 Ik vertrouw erop dat ten minste twee andere collega's het beste met mij voor hebben.			.412	
ZR. 15 Het is moeilijk voor mij om mijn huis of mijn baan stop te zetten voor een andere huis of baan.			.327	
ZR. 11 Ik heb frequent feedback van mijn baas nodig om zeker te zijn dat ik goed bezig ben met mijn werk.				.654
ZR. 2 Ik heb collega's of ondergeschikten nodig om mij zeker te voelen over mijn werk.				.494
ZR. 14 Ik raadpleeg altijd collega's wanneer ik belangrijke beslissingen maak.				.367

Pattern and structure matrix for PAF analysis with Promax Rotation of 4 Factor Solution of the variables digital literacy & proactive approach

	Factor	
Item	**1**	**2**
DG. 4 Ik weet wanneer ik wel en wanneer ik niet informatie welke ik bezit online moet delen.	.729	
DG. 2 Ik voel me zelfverzekerd in mijn beoordeling of een website vertrouwd kan worden.	.720	
DG. 1 Het is eenvoudig voor mij om online de informatie te vinden waar ik naar zoek.	.537	
DG. 5 Ik voel me zelfverzekerd in het schrijven van reacties op een blog, website of forum.	.532	
DG. 3 Ik vergelijk in het algemeen verschillende websites om te beslissen of informatie waar is.	.395	
PA. 2 Ik vind niets opwindender dan het omzetten van mijn ideeen naar realiteit.		.762
PA. 1 Ik ben altijd sterk gemotiveerd in het aangrijpen van bruikbare verandering.		.590
PA. 3 Als ik iets zie dat ik niet leuk vind dan zoek ik naar een oplossing om het beter te maken.		.571
PA. 4 Als ik in iets geloof dan ga ik er volledig voor, ook wanneer de kans klein is dat het me lukt.		.500

Appendix C: Chi Squares tables

Jelmer van der Linden, 2017

Table 4. ***Summary of the statistics, correlations and results from the regression analysis.***

	R-Square	Adj. r-square	Unstandardized coefficients		Standardized coefficients	T	Sig.	
Model			**β**	**STD. error**	**Beta**			**Durbin-watson**
1. Constant	.017	.014	5.818	.400		14.539	.000	
Age			-.020	.009	-.132	-2.217	.027	
2. Constant	.033	.026	7.785	1.007		7.773	.000	
Age			-.022	.009	-.143	-2.410	.017	
Proactive approach			-.153	.072	-.126	-2.131	.034	
3. Constant	.050	.039	6.083	1.265		4.809	.000	2.033
Age			-.019	.009	-.126	-2.120	.035	
Proactive approach			-.179	.074	-.162	-2.653	.008	
Digital literacy			.106	.048	.135	2.196	.029	

[a] Dependent variable: The extent of the use of web 2.0 learning technologies

Table 6. ***Summary of the statistics, correlations and results from the regression analysis.***

	R-Square	Adj. R-square	Unstandardized coefficients		Standardized coefficients	T	Sig.	
Model			**β**	**STD. error**	**Beta**			**Durbin-watson**
1. Constant			2.351	.079		29.753	.000	2.001
Work experience (years working as an online entrepreneur)	.046	.042	-.034	.009	-.214	-3.589	.000	

[a] Dependent variable: The variety of the use of web 2.0 learning technologies

Table 5. ***Anova[a] of the regression analysis***

Model	Sum of squares	Degrees of freedom	Mean Square	F	Sig.
1 Regression	17.831	1	17.831	4.917	.027 [b]
Residual	1011.814	279	3.627		
Total	1029.644	280			
2 Regression	34.086	2	17.043	4.759	.009 [C]
Residual	995.558	278	3.581		
Total	1029.644	280			
3 Regression	51.129	3	17.043	4.825	.003 [C]
Residual	978.515	277	3.533		
Total	1029.644	280			

[a] Dependent variable: The extent of the use of web 2.0 learning technologies
[b] Predictors (constant), Age
[c] Predictors (constant), Age, Proactive approach
[d] Predictors (constant), Age, Proactive approach, Digital literacy

Table 7. ***Anova[a] of the regression analysis***

Model	Sum of squares	Degrees of freedom	Mean square	F	Sig.
1. Regression	10.151	1	10.151	12.880	.000 [b]
Residual	211.215	268	.788		
Total	221.367	269			

[a] Dependent variable: The variety of the use of web 2.0 learning technologies
[b] Predictors (constant), work experience (years working as an online entrepreneur)

Table 8. ***Summary of the statistics, correlations and results from the regression analysis.***

	R-Square	Adj. r-square	Unstandardized coefficients		Standardized coefficients	T	Sig.	
Model			**β**	**STD. error**	**Beta**			**Durbin-watson**
1. Constant	.053	.050	.787	.075		10.464	.000	
Work experience			.035	.009	.231	3.881	.000	
2. Constant	.069	.062	-.072	.406		-.176	.860	
Work experience			.034	.009	.227	3.850	.010	
Proactive approach			.070	.032	.127	2.154	.032	
3. Constant	.85	.75	-.707	.499		-1.415	.158	2.112
Work experience			.038	.009	.249	4.181	.000	
Proactive approach			.085	.033	.155	2.581	.010	
Needing of others SR			.059	.027	.131	2.153	.032	

[a] *Dependent variable: The variety of the use of offline learning technologies*

Table 9. ***Anova[a] of the regression analysis***

Model		Sum of squares	df	Mean Square	F	Sig.
1.	Regression	10.747	1	10.747	15.060	.000 [b]
	Residual	191.253	268	.714		
	Total	202.000	269			
2.	Regression	14.013	2	7.006	9.951	.000 [c]
	Residual	187.987	267	.704		
	Total	202.000	269			
3.	Regression	17.233	3	5.744	8.270	.000 [d]
	Residual	184.767	266	.695		
	Total	202.000	269			

[a] Dependent variable: The variety of the use of offline learning technologies
[b] Predictors (constant), work experience, proactive approach
[c] Predictors (constant), work experience, proactive approach, needing of others

Table 10. ***Crosstabulation of the variable age with the choice for an online v.s. offline source***

Age		Online	Offline	Total
Digital native	Count	96 (34.16%)	17 (6.05%)	113 (40.21%)
	Expected count	86.5 (30.78%)	26.1 (9.29%)	
Digital immigrant	Count	119 (42.35%)	49 (17.44%)	168 (59.79%)
	Expected count	128.5 (45.73%)	39.5 (14.06%)	
		215 (76.51%)	**66 (23.49%)**	**281 (100%)**

Table 11. ***Chi Square of the variable age with the choice for an online v.s. offline source***

	Value	DF	Asymptotic Significance (two-sided)
Pearson chi-Square	7.498 [a]	1	.006
Likelihoodratio	7.819	1	.009
Linear-by-linear association	7.471	1	.005
N of valid cases	281		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 26.54.

Table 12. ***Symmetric measures of the variable age with the choice for an online v.s. offline source for learning about juridical knowledge.***

		Value	Approximate Significance
Nominal by nominal	Phi	.163	.006
	Cramer's V	.163	.006
N of valid cases		281	

Table 13. ***Crosstabulation of the variable work experience with the choice for an online v.s. offline source***

Work experience (years working as an online entrepreneur)		Online	Offline	Total
0-5 years of work experience	Counts	142 (50.53%)	32 (11.39%)	174 (61.92%)
	Expected counts	133.1 (47.37%)	40.9 (14.56%)	
6-10 years of work experience	Counts	57 (20.28%)	18 (6.41%)	75 (26.69%)
	Expected counts	57.4 (20.43%)	17.6 (6.26%)	
> 10 years of work experience	Counts	16 (5.69%)	16 (5.69%)	32 (11.39%)
	Expected counts	24.5 (8.72%)	7.5 (2.67%)	
		215 (76,51%)	**66 (23.49%)**	**281 (100%)**

Table 14. ***Chi Square of the variable work experience with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson chi-Square	15.043 [a]	2	.001
Likelihoodratio	13.234	2	.001
Linear-by-linear association	11.839	1	.001
N of valid cases	281		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 6.58.

Table 15. ***Symmetric measures of the variable work experience with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by nominal	Phi	.127	.104
	Cramer's V	.127	.104
N of valid cases		281	

Table 16. ***Crosstabulation of the variable work experience with the choice for an online v.s. offline source***

Work experience (years working as an online entrepreneur)		**Online**	**Offline**	**Total**
0-5 years of work experience	Counts	123 (43.77%)	51 (18.15%)	174 (61.92%)
	Expected counts	113.3 (40.21%)	60.7 (21.60%)	
6-10 years of work experience	Counts	44 (15.66%)	31 (11.03%)	75 (26.69%)
	Expected counts	48.8 (17.37%)	26.2 (9.23%)	
> 10 years of work experience	Counts	16 (5.69%)	16 (5.69%)	32 (11.39%)
	Expected counts	20.8 (7.40%)	11.2 (3.99%)	
		183 (65.12%)	**98 (34.88%)**	**281 (100%)**

Table 17. ***Chi Square of the variable work experience with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson chi-Square	6.973 [a]	2	.031
Likelihoodratio	6.853	2	.032
Linear-by-linear association	6.938	1	.008
N of valid cases	281		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 11.16.

Table 18. Symmetric measures of the variable work experience with the choice for an online v.s. offline source

		Value	Approximate significance
Nominal by nominal	Phi	.158	.031
	Cramer's V	.158	.031
N of valid cases		281	

Table 19. ***Crosstabulation of the variable trust in others with the choice for an online v.s. offline source***

Trust in others		**Online**	**Offline**	**Total**
Strongly Disagree	Count	5 (1.78%)	3 (1.07%)	8 (2.85%)
	Expected count	5.2 (1.85%)	2.8 (1%)	
Disagree	Count	85 (30.25%)	24 (8.54%)	109 (38.79%)
	Expected count	71 (25.27%)	38 (13.52%)	
Neutral	Count	80 (28.47%)	63 (22.42%)	143 (50.89%)
	Expected count	93.1 (33.13%)	49.9 (17.76%)	
Agree	Count	13 (4.63%)	8 (2.85%)	21 (7.47%)
	Expected count	13.7 (4.88%)	7.3 (2.60%)	
Strongly agree	Count	0 (0%)	0 (0%)	0 (0%)
	Expected count	0 (0%)	0 (0%)	
		183 (65.13%)	**98 (34.88%)**	**281 (100%)**

Table 20. ***Chi Square of the variable trust in others with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	13.360 [a]	3	.004
Likelihoodratio	13.804	3	.003
Linear-by-linear association	7.234	1	.007
N of valid cases	281		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 2.79.

Table 21. ***Symmetric measures of the variable trust in others with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.218	.004
	Cramer's V	.218	.004
N of valid cases		281	

Table 22. ***Crosstabulation of the variable digital literacy with the choice for an online v.s. offline source***

Digital literacy		**Online**	**Offline**	**Total**
Strongly disagree	Count	0 (0%)	0 (0%)	0 (0%)
	Expected count			
Disagree	Count	2 (0.71%)	0 (0%)	2 (0.71%)
	Expected count	1.5 (0.53%)	.5 (0.18%)	
Neutral	Count	14 (4.98%)	13 (4.63%)	27 (9.61%)
	Expected count	20.3 (7.23%)	6.7 (2.38%)	
Agree	Count	156 (55.51%)	49 (17.44%)	205 (72.95%)
	Expected count	153.9 (54.77%)	51.1 (18.19%)	
Strongly agree	Count	39 (13.88%)	8 (2.85%)	47 (11.03%)
	Expected count	35.3 (12.56%)	11.7 (4.16%)	
		211 (75.09%)	**70 (24.91%)**	**281 (100%)**

Table 23. ***Chi Square of the variable digital literacy with the choice for an online v.s. offline source***

	Value	**DF**	**Asymptotic significance (two-sided)**
Pearson Chi-Square	10.133 [a]	3	.017
Likelihoodratio	9.723	3	.021
Linear-by-linear association	5.304	1	.021
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 24. ***Symmetric measures of the variable digital literacy with the choice for an online v.s. offline source***

		Value	**Approximate significance**
Nominal by Nominal	Phi	.190	.017
	Cramer's V	.190	.017
N of valid cases		281	

Table 25. ***Crosstabulation of the variable age with the choice for an online v.s. offline source***

Age		**Online**	**Offline**	**Total**
Digital native	Count	86 (30.60%)	27 (9.61%)	113 (40.21%)
	Expected count	77.6 (27.62%)	35.4 (12.60%)	
Digital immigrant	Count	107 (38.09%)	61 (21.71%)	168 (59.79%)
	Expected count	115.4 (41.07%)	52.6 (18.72%)	
		193 (68.68%)	**88 (31.32%)**	**281 (100%)**

Table 26. ***Chi Square of the variable age with the choice for an online v.s. offline source***

	Value	**DF**	**Asymptotic significance (two-sided)**
Pearson Chi-Square	4.842 [a]	1	.028
Likelihoodratio	4.939	1	.026
Linear-by-linear association	4.824	1	.028
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 27. ***Symmetric measures of the variable age with the choice for an online v.s. offline source***

		Value	**Approximate significance**
Nominal by Nominal	Phi	.131	.028
	Cramer's V	.131	.028
N of valid cases		281	

Table 28. ***Crosstabulation of the variable work experience with the choice for an online v.s. offline source***

Work experience (years working as an online entrepreneur)		Online	Offline	Total
0-5 years of work experience	Count	127 (45.20%)	47 (16.73%)	**174 (61.92%)**
	Expected count	119.5 (42.53%)	54.4 (19.36%)	
6-10 years of work experience	Count	50 (17.79%)	25 (8.90%)	**75 (26.69%)**
	Expected count	51.5 (18.33%)	23.5 (8.36%)	
> 10 years of work experience	Count	16 (5.69%)	16 (5.69%)	**32 (11.39%)**
	Expected count	22 (7.83%)	10 (3.56%)	
		193 (68.68%)	**88 (31.32%)**	**281 (100%)**

Table 29. ***Chi Square of the variable work experience with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	6.834 [a]	2	.033
Likelihoodratio	6.493	2	.039
Linear-by-linear association	6.058	1	.014
N of valid cases	281		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 10.02.

Table 30. ***Symmetric measures of the variable work experience with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.156	.033
	Cramer's V	.156	.033
N of valid cases		281	

Table 31. ***Crosstabulation of the variable needing others with the choice for an online v.s. offline source***

Needing others		Online	Offline	Total
Strongly Disagree	Count	19 (6.76%)	9 (3.20%)	**28 (9.96%)**
	Expected count	19.2	8.8	
Disagree	Count	98 (34.88%)	28 (9.96%)	**126 (44.84%)**
	Expected count	86.5 (30.78%)	39.5 (14.06%)	
Neutral	Count	68 (24.20%)	46 (16.37%)	**114 (40.57%)**
	Expected count	78.3 (27.86%)	35.7 (12.70%)	
Agree	Count	8 (2.85%)	5 (1.78%)	**13 (4.63%)**
	Expected count	8.9 (3.17%)	4.1 (1.46%)	
Strongly agree	Count	0 (0%)	0 (0%)	**0 (0%)**
	Expected count			
		193 (68.68%)	**88 (31.32%)**	**281 (100%)**

Table 32. ***Chi Square of the variable needing others with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	9.488 [a]	3	.023
Likelihoodratio	9.607	3	.022
Linear-by-linear association	4.411	1	.036
N of valid cases	281		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.07.

Table 33. ***Symmetric measures of the variable needing others with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.184	.004
	Cramer's V	.184	.004
N of valid cases		281	

Table 34. ***Crosstabulation of the variable age with the choice for an online v.s. offline source***

Age		Online	Offline	Total
Digital native	Count	89 (31.67%)	24 (8.54%)	113 (40.21%)
	Expected count	79.2 (28.19%)	33.8 (12.03%)	
Digital immigrant	Count	108 (38.43%)	60 (21.35%)	168 (59.79%)
	Expected count	117.8 (41.92%)	50.2 (17.86%)	
		197 (70.11%)	**84 (29.89%)**	**281 (100%)**

Table 35. ***Chi Square of the variable age with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	6.755 [a]	1	.009
Likelihoodratio	6.940	1	.008
Linear-by-linear association	6.731	1	.009
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 36. ***Symmetric measures of the variable digital literacy with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.155	.009
	Cramer's V	.155	.009
N of valid cases		281	

Table 37. ***Crosstabulation of the variable age with the choice for an online v.s. offline source on the ICT practical case***

Age		Online	Offline	Total
Digital native	Count	64 (22.78%)	49 (17.44%)	**113 (40.21%)**
	Expected count	75.2 (26.76%)	37.8 (13.45%)	
Digital immigrant	Count	123 (43.77%)	45 (16.01%)	**168 (59.79%)**
	Expected count	111.8 (39.79%)	56.2 (20%)	
		187 (66.55%)	**94 (33.45%)**	**281 (100%)**

Table 38. ***Chi Square of the variable age with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	8.340 [a]	1	.004
Likelihoodratio	8.272	1	.004
Linear-by-linear association	8.310	1	.004
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 39. ***Symmetric measures of the variable digital literacy with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	-.172	.004
	Cramer's V	.172	.004
N of valid cases		281	

Table 40. ***Crosstabulation of the variable development opportunities with the choice for an online v.s. offline source***

Harnessing opportunities		Online	Offline	Total
Strongly disagree	Count	0 (0%)	0 (0%)	**0 (0%)**
	Expected count	0 (0%)	0 (0%)	
Disagree	Count	2 (0.71%)	0 (0%)	**2 (0.71%)**
	Expected count	1.3 (0.56%)	.7 (0.25%)	
Neutral	Count	31 (11.03%)	23 (8.19%)	**54 (19.22%)**
	Expected count	35.9 (12.78%)	18.1 (6.44%)	
Agree	Count	143 (61.07%)	60 (21.35%)	**203 (72.24%)**
	Expected count	135.1 (48.08%)	67.9 (24.16%)	
Strongly agree	Count	11 (3.91%)	11 (3.91%)	**22 (7.83%)**
	Expected count	14.6 (5.16%)	7.4 (2.63)	
		187 (66.55%)	**94 (33.45%)**	**281 (100%)**

Table 41. ***Chi Square of the variable development opportunities with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	8.340 [a]	1	.004
Likelihoodratio	8.272	1	.004
Linear-by-linear association	8.310	1	.004
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 42. ***Symmetric measures of the variable development opportunities with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.159	.068
	Cramer's V	.159	.068
N of valid cases		281	

Table 43. ***Crosstabulation of the variable digital literacy with the choice for an online v.s. offline source***

Digital literacy		Online	Offline	Total
Strongly disagree	Count Expected count	0 (0%)	0 (0%)	**0 (0%)**
Disagree	Count Expected count	1 (0.36%) 1.3 (0.46%)	1 (0.36%) 0.7 (0.25%)	**2 (0.72%)**
Neutral	Count Expected count	14 (4.98%) 18 (6.41%)	13 (4.63%) 9 (3.20%)	**27 (9.61%)**
Agree	Count Expected count	146 (51.96%) 136.4 (48.54%)	59 (21%) 68.6 (24.41%)	**205 (72.95%)**
Strongly agree	Count Expected count	26 (9.25%) 31.3 (11.14%)	21 (7.47%) 15.7 (5.59%)	**47 (16.73%)**
		187 (66.55%)	**94 (33.45%)**	**281 (100%)**

Table 44. ***Chi Square of the variable digital literacy with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	7.537 [a]	3	.057
Likelihoodratio	7.321	3	.062
Linear-by-linear association	.023	1	.879
N of valid cases	281		

a. 2 cells (25%) have expected count less than 5. The minimum expected count is .50.

Table 45. ***Symmetric measures of the variable digital literacy with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.164	.057
	Cramer's V	.164	.057
N of valid cases		281	

Table 46. ***Crosstabulation of the variable work experience with the choice for an online v.s. offline source***

Work experience (years working as an online entrepreneur)		Online	Offline	Total
0-5 years of work experience	Count Expected count	142 (50.18%) 132.5 (47.15%)	32 (11.39%) 41.5 (18.02%)	**174 (61.92%)**
6-9 years of work experience	Count Expected count	52 (18.51%) 57.1 (20.32%)	22 (7.83%) 17.9 (6.37%)	**74 (26.33%)**
> 10 years of work experience	Count Expected count	19 (6.76%) 24.4 (8.68%)	13 (4.63%) 7.6 (2.70%)	**32 (11.39%)**
		214 (76.16%)	**67 (23.84%)**	**281 (100%)**

Table 47. ***Chi Square of the variable work experience with the choice for an online v.s. offline source***

	Value	DF	Asymptotic significance (two-sided)
Pearson Chi-Square	9.057 [a]	2	.011
Likelihoodratio	8.603	2	.014
Linear-by-linear association	8.992	1	.003
N of valid cases	281		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 7.63.

Table 48. ***Symmetric measures of the variable work experience with the choice for an online v.s. offline source***

		Value	Approximate significance
Nominal by Nominal	Phi	.180	.011
	Cramer's V	.180	.011
N of valid cases		281	