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MAKING SENSE OF WEB 2.0 TECHNOLOGY: DO EUROPEAN STUDENTS USE THE SOCIAL MEDIA APPLICATIONS FOR EDUCATIONAL GOALS?

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Abstract

The role of web 2.0 applications and more specific social media in e-learning is growing. The use of Wikipedia, YouTube, Flickr, Slideshare and Delicious is becoming accepted as shared information sources in current education. Facebook, Naymz, Twitter and blogs give access to detailed personal information and thematic insights of relevant researchers and professionals and offer opportunities for immediate online conversations. However, there is still limited research into this use, the effects on education and the factors and characteristics that steer the use and effects of these applied social media.

In this research, we described the results of an international cross-cultural survey into the key determinant factors that are responsible for the intention to use social media in European higher education. We conducted an online survey of 285 undergraduate and graduate students in selected higher institutions in the Netherlands, Great Britain and Ireland. The survey was based on the Unified Theory of User Acceptance of Technology (UTAUT) combined with the cultural dimensions as described by Hofstede. We found that two key variables of the UTAUT were good predictors' of intention to use social media in higher education. These variables are performance expectancy, social influence. We also discovered that two additional constructs, control belief, and community identity influences the intention to use social media. Given the social characteristic of these media, we found that these relationships are significantly mediated by Hofstede's cultural dimensions, namely individualism, Power distance, masculinity, and technological experience. We concluded that culture is a vital factor to be taken into consideration as it relates to intention, and usage of social media in European higher education. From a theoretical perspective we get deep understanding of key determinant factors that contribute to the use of social media in higher education; this study fills the void created by lack of research interest in this new domain, and opens a door of opportunities for other researchers to explore, especially those having interest in European cross-cultural studies. In addition, institutions of higher learning and other organizations will find the recommendations offered at the end of this paper useful, as it made a number of suggestions on how to utilize the opportunities offered by web 2.0 technologies for e-learning benefits.

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To my love! Ogochukwu, and my dad Emmanuel, I am sorry for the pains my long separation with you people might have caused. I hope to join you soon.

List of Abbreviations

AGM	-	Annual General Meeting
C-TAM-TPB	-	Combined Technology Acceptance Model and Theory of Planned Behavior
CB	-	Control Belief
CI	-	Community Identity
CDI	-	Cultural Dimension Indexes
EE	-	Effort Expectancy
EIS	-	Executive Information Systems
ELIG	-	European Learning Industry Group
EU	-	European Union
GSS	-	Support Group Systems
ICT	-	Information and Communication Technology
IDI	-	Individualism Index
IDT	-	Innovation Diffusion Theory
IT	-	Information Technology
IU	-	Intention to Use
KDF	-	Key Determinant Factors
LTO	-	Long – Term Orientation
MI	-	Masculinity Index
MM	-	Motivational Model
MMO	-	Massively Multiplayer Online
MPCU	-	Model of PC Utilization
NC	-	National Culture
PDI	-	Power Distance Index
PE	-	Performance Expectancy
SCT	-	Social Cognitive Theory
SF	-	Social Influence
SM	-	Social Media
SMS	-	Short Messaging Service
TEP	-	Technological Experience
TAM	-	Technology Acceptance Model
TAM	-	Technology Acceptance Model 2
TPB	-	Theory of Planned Behavior
TRA	-	Theory of Reasoned Action
UB	-	Use Behavior
UDI	-	Uncertainty Avoidance Index
UTAUT	-	User Acceptance of Information Technology

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Chapter One
Introduction

1.0 Introduction

The use of social media for educational purpose is a rather new idea, and a huge opportunity for higher education and lifelong learning, its potential is still to be exploited. Several universities have set up podcasting but literature is still poor, case studies and evaluations inadequate. No concerted combined efforts have been made to explore the relevance and beneficial consequences of web 2.0 in education.

In depth investigation of the relationship between web 2.0 technology and learning in higher education are still rare. No research known to us has carried out a large scale exploration of educational uses of web 2.0 applications in Europe. The little research attempts made by Huffaker (2006), Quible (2005) and Selingo (2004) which are all referenced in Ullrich et al. (2008) rather discussed a number of interesting possibilities for the use of blogs. Lazzari (2007) described an experience of educational podcasting limited to a group of students studying the course multimedia communication and human-computer interaction. Berners-Lee (1999), Berners-Lee, Hendler and Lassila (2001) both in Ullrich et al. (2008) only explored the potentials of web 2.0 in research and learning. Till date, no documented study known to us has attempted to investigate effects of national culture on the intention to use the social media for educational goal.

Our purpose with this current study then is to know if students in European higher institutions use the social media for educational purposes. In addition, we want to know whether national culture has effect on intention to use the social media as well as the students' perceptions towards social media tools. In doing that, we will attempt to provide answer to crucial research question; do students of European higher education use the social media for educational goals?

1.1 Research Motivation

At European Council in Lisbon in March 2000, the European Union (EU) set the following challenging objective for Europe to become by 2010.
"*The most competitive and dynamic knowledge based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.*"
The Council then demanded that new educational and training systems be adapted to meet the ambitious target, placing this demand at the hierarchy of the political agenda (Reding, 2000).

Being fully aware that appropriate use of information and communication technology (ICT) in education will help to achieve this goal, the EU is making a concerted effort to exploit the potential of the Internet to improve the quality of education. The EU has provided enablers to ensure Internet use. There is a secure

information infrastructure, and widespread availability of broadband access at competitive prices.

Notwithstanding these concerted and lofty efforts to improve access, and use of the internet for education and training purposes – a senior policy adviser to The European Learning Industry Group (ELIG), Elmar Husmann is not satisfied with the level of achievement recorded so far. He told delegates at the AGM held in Oct., 2008 at Sestri Levante, Italy, hosted by Giunti Labs that ELIG needs to re-think its positioning with regards to EU. Husmann stated that "*e-learning has disappeared from the EU policy agenda*". He also demanded that a broader vision of next generation learning enabled by information and communications technology to be taken. The prime area according to Husmann will include "*supporting informal learning and knowledge creation via social network*" (Little, 2008).

Husmann's last statement clearly demonstrates an oversight on the part of researchers. It brings to limelight the void created by dearth of research attempt to exploring the use effects of social media in distance education.

1.2 Immediate concerns

Apart from small scale studies, each designed to experiment if one form of social media application or the other will be suitable for educational context; no research study has been conducted to explore the general use of social media applications in European higher institutions.

Studies to assess the widespread of these new kinds of online activities in day to day digital lives of European learners are still lacking. Research efforts made so far (Selwyn 2007; Sauchuez 2008; Reuben 2008; Cole 2009; & Lazzari 2009) all concentrated on a small group of students as case studies to test if a particular kind of social media application suits a particular educational purpose or not. None of these studies worried to discuss at a large scale the perception of or what stimulates intention to use the social media applications for educational goals among students' in European higher institutions.

Mazman and Usluel (2009) investigated the use of the social network in educational context and uncovered that social factor, perceived ease of use, perceived usefulness and innovativeness are determining factors that effect adoption. His study was not elaborate and at the same time failed to focus on the cultural aspect to unravel the effect of culture on students' intention to use the social media. Macfadyen (2005) is of the opinion that participation in online communication differ between different cultural groups. Valcke, Zhu and Schellen (2008) assert that differences exist in learning procedures between students from different cultural background. They stressed that students from various cultures have a different view of the learning environment.

In summary, there are concerns to assess if students of European higher education use the social media for educational goals, and to consider the effect of culture on intention to use social media as culture shapes learners values, perceptions, and goals Valcke et al (2008).

1.3 Research Objectives

- To stimulate research interest in this new domain, by attempting to fill the void created by lack of research effort on use of social media in European higher education.

- To investigate the similarities and differences between the two perspectives of Dutch institutions and United Kingdom institutions on a host of issues related to use of social media applications in higher education.

- To determine the contribution of culture on the students' intention to use social media in higher education.

- To use the findings to make recommendations on the adoption of social media to higher institutions of learning, the European Learning Industry Group (ELIG), and other concerned organizations, including European government.

1.4 Research questions

The following fundamental guiding questions are at the centre of this inquire:

(a) Do students of European higher institutions use the social media for educational Purpose? If they do, what is their perception of social media applications on learning outcomes?

(b) Are there differences in distribution of social media use in European higher institutions?

(c) Do Hofstede's dimensions apply to ways the social media applications are used in higher institutions?

Chapter Two
Literature Review

2.0 Introduction

With regards to the research questions, the review of literature was guided by the fundamental concern as it relates to the use of the social media in higher institutions. Exploration and in depth study of literature underscores the importance of reviewing the potentials, and relevance of web 2.0 applications in education. A review of similar studies on the educational relevance of web 2.0 tools is carried out to obtain insights and guide the interpretation of results.

The chapter is a review of literature structured into four sections. Section 2.1 reviews research efforts made to evaluate the educational applications of web 2.0. The aim of the review is to gain insights into the nature and various ways web 2.0 applications can be applied to educational use. Section 2.2 presents documented opinions about potentials of web 2.0 with regards to learning. The third section, 2.3, discusses the major concerns over the use of social media for educational purposes. A summary of the review is provided in the last section.

2.1 Experimented educational applications of web 2.0 tools

The growing number of web 2.0 applications and the associated number of individuals who are making use of them especially the students, have continued to raise the consciousness of researchers as well as educators on the possibilities of utilizing the applications for educational goals. According to Allen (2004), web 2.0 applications are getting extreme attention across the entire sectors of education industry. Researchers are of the opinion that the existence of the new web 2.0 applications and technologies are creating more opportunities for efficient learning and have the possibility to aid lifelong competence development (Klamma et al, 2007). Research efforts made so far underscores the relevance of web 2.0 and social media applications for educational goals.

Recent study by Selwyn (2007) as cited in Selwyn (2009) of undergraduate students' use of facebook in United Kingdom hint that facebook use is fundamentally informal and frequently at a tangent with the official learning objectives of the educators. The study revealed that while facebook can be used to satisfy a number of useful educational purposes, these are not peculiar with formal education expectations. The data generated from the study shows that facebook could act as significant site for informal cultural learning of being a student, with online interactions, admitting roles to be learnt, values understood and identities shaped (Selwyn, 2007).

In a related study, Cole (2009) used qualitative data to investigate the use of wiki technology to support learning engagements, and found that wiki had little impact on students' engagement. The study showed that most of the participating students chose not to post to the wiki. Similar experimental study of academic experience with podcasting,

which included a group of students offering a course on multimedia communication and human computer interaction, indicates that the quantitative analysis of the student's exam result did not provide significant evidence for its impact on learning (Lazzari, 2009).

An elaborate experimental study that explored the relationship between learning styles and web 2.0 utilization (Selwyn (2007), showed a significant correlation coefficient between learning styles and web 2.0 utilization. The result of the study revealed that students found web 2.0 tools to be easy to use and are confident in using online community tools, and video sharing applications. Fact generated from the correlation analysis indicates that learners were more comfortable in deciding which of the web 2.0 applications to use based on social view point. An evaluative study by Sauchuez (2007) using focused group of eighteen users to gauge experience with second life found that learners expressed an affinity with the social learning activities in second life; they learnt in this learning space and at same time loved the interaction with avatars of other learners.

A cross national survey of university students by Reuben (2008) found that social media applications are currently being used in institutions of higher learning for marketing and communication goals. The result of the survey indicates that students admit that the tools are used in communicating with current students; reaching out to alumni, and for recruitment purpose. The study concluded by acknowledging that blogs remains the most popular social media application used for recruitment purpose in higher institutions.

Ullrich, Borau, Luo, Tan, Shen and Shen (2008) experimental study explains why web 2.0 is good for learning and for research. The study demonstrates that web 2.0 services indeed stimulate active participation among learners. Findings indicate that micro-bogging provides a number of possibilities and benefits which differ from the standard classroom interaction. From a linguistic perspective, the study concludes that micro-blogging is a communicative approach to teaching and learning of alien language.

Based on the fact that social media applications are many, they aggregate to serve specific educational goals for the users. The email, instant messaging systems (SMS), and skype are used for communication purposes among scholars. The tools are used to exchange information, thereby facilitating learning. Blogs, video wiki, feedback, and feeds on feeds on the other hand are used for publishing and sharing contents. These tools in combination with asynchronous and synchronous communication tools are used to take on and manage the learning challenges of self-direction, social networking and collaboration (Grodecka, Wild & Kieslinger, 2008).

The blogs and feedback, wikis, google calendar, google docs and boodle are used as collaborative tools in the field of higher learning. These tools are used to form collaborative teams, who share common objectives different from personal networking objectives. Learning in this condition comes from the process of collaboration,

interaction and reflection on how a given task should be approached (Mason & Rennie, 2006) in (Grodecka, Wild & Kieslinger, 2008).

2.2 Educational potentials of web 2.0 applications

Although limited research evidence is available to justify the adoption of web 2.0 tools for educational goals, researchers as well as educationists alike have identified a number of potentials web 2.0 technologies can offer for educational purposes.

According to Bryant (2006) in Huang et al, (2007), web 2.0 tools offer significant possibilities for learners who have several needs to enhance their learning experience through enriched interactions. This view is shared with Klamma (2007) who suggests that web 2.0 applications have tremendous potential for facilitating and enhancing lifelong learning through linking of students in collaborative environments with decrease in boundaries. Appreciating its potential, Safran, Helic and Gutl (2007) further stress the impact web 2.0 could have on the collective mental development of students. According them, web 2.0 applications have the capacity to preserve critical and analytical associational thinking, aid analogical thoughts through access to wealth of information and interaction with several view points in terms of education.

Bryant (2006) in Mcloughlin and Lee (2007) emphasize that social media tools have significant potential to tackle the needs of today's diverse students, enriching their learning experiences through personalization, customizations and robust opportunities for collaboration and networking. Evaluating social media from research perspective, Anderson (2007) in his web 2.0 executive summary, reports on the potential benefits of web 2.0 tools in research field. In his view, the tools have the potential to increase communication between researchers and practitioners who have left the university. The view point expressed by Anderson collaborate the relative advantage of web 2.0 applications as captured by (Salaway, Caruso, Nelson & Ellison, 2008). According Salaway et al web 2.0 applications have the ability to aggregate information, data and thoughts from different places rapidly and with less difficulty that the material continues to be accessible to the students after they have left the university.

2.3 Concerns over the use of web 2.0 applications for educational goals

Opinion is still divided over the benefits of social media or web 2.0 applications in education. Whiles some educationists like Thomas (2008) in Selwyn (2007) predicts potential groundbreaking significances of web 2.0 applications in transformation of learning, others seems skeptical raising concerns on it's safely to education. One of the key concerns of educators is the issue of e-safety. As explained by Selwyn (2007), e-safety is a serious constraint of younger learners' educative use of the tools. Growing concern over the potential of young students exhibiting a range of risky behaviors is behind the call from those advising against its use.

Another serious issue is the ability of young individuals to use social media applications appropriately and carefully. Study conducted by Pew (2005) as cited in Selwyn (2007) disclosed that 79% of young internet users agree that they share information online without exercising much caution. Recent survey by Lernke and Coughlin (2009) found that half of the district administrators of American K-12 schools admitted that web 2.0 applications have negative or highly negative influence on exercise and physical conditioning of the students.

Time commitment is another issue that worries experts as it pertains to web 2.0 applications and its educational use. Reuben (2008) highlights that adding social media mix to workload creeps that professionals and students deals with in higher education will result to time intensity. He cautioned that strategic reason and plan should guide social media use in education.

Information overload is among the issues that dominate the mind of experts as it concerns use of the social media or web 2.0 applications for educational purpose. As Reuben (2008) points out, advent of social media has produced many kinds of media, that those who follow blogs, Twitter, facebook etc in order to contribute can easily find themselves being overloaded with information.

2.4 Summary of the literature review

This subsection provides a summary of the literature on the use of social media for educational purpose in higher education.

The literature illustrates that though empirical evidence is building up to establish the usefulness of social media or web 2.0 applications in education, most of the studies for now are still at the experimentation stages to see if the applications of the tools in education will be profitable. Research studies on the general and actual use of the social media applications or web 2.0 technologies in the higher education system in European institutions is still lacking. In addition, none of these studies reviewed made attempt to experiment on the effect of culture on students' intention to use the social media. The oversight buttresses Joo (1999) claims that ethical and cultural issues as it relates to Internet use have been largely relegated in education.

The literature on the potential benefits of web 2.0 tools in learning and education holds high hope among researchers and educators alike. The literature indicates that evidences are still lacking to establish these potentials, as no sensible discussion is available yet that can explain the widespread of these new forms of online activities in the day to day digital lives of the learners, and educators as well.

The literature suggests that some individuals are still skeptical and are concerned over the negative implications adoption of web 2.0 technologies for educational goals would have, if adequate measures are not taken to mitigate the flipside of the benefits of the applications.

2.5 Theoretical Framework and hypothesis

This section on exploration and formulation of the conceptual model begins with the explanation of theoretical foundation for the model 5.1. The conceptual model is

addressed in section 5.2. The hypotheses for the three research questions are stated in the section 5.3.

The empirical study by Venkatesh, Morris, Davis and Davis (2003) renders a useful staring point for framing our discussion of conceptual model since it adopted sets of determinants and moderators, impacting individual's intention to use information technology. Using eight outstanding models (1) Theory of Reasoned action (Sheppards et al., 1989), (2) Technology Acceptance Model (Venkatesh & Davis, 2000), (3) Motivational Model (Vallerand, 1997), (4) Social Cognitive Theory (Bandura, 1986), (5) Innovation Diffusion Theory (Rogers, 1995), (6) Theory of Planned Behavior (Ajzen, 1991), (7) Combined Technology Acceptance Model and Theory of Planned Behavior (Taylor and Todd, 1995), and (8) Model of PC Utilization (Triandis, 1977) as an underlying framework, Venkatesh et al conceptualized User Acceptance of Information Technology (UTAUT) as a unified view.

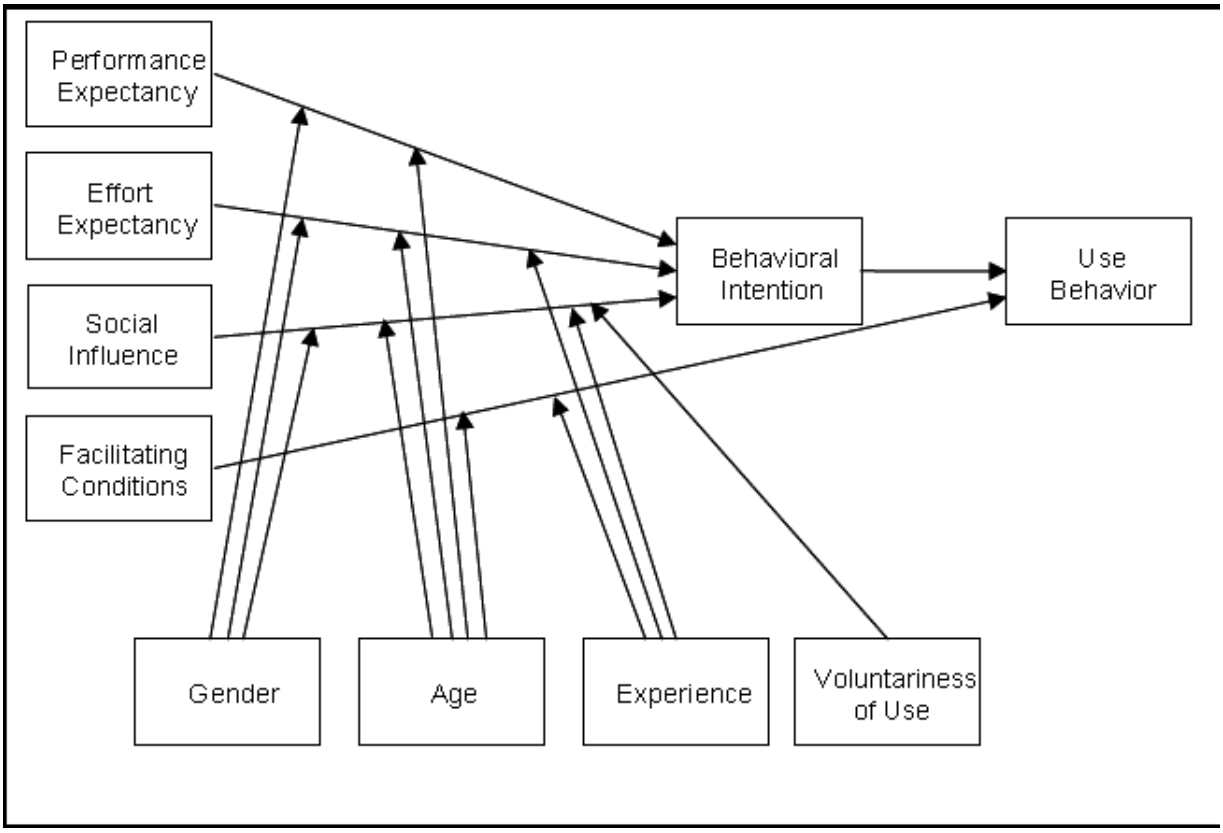


Figure 1: Research Model Venkatesh et al. 2003

In formulating their model, critical comparison of the eight models were made by the researchers, proceeded by the formulation of four core determinants of intention and use (performance expectancy, effort expectancy, social influence and facilitating conditions), and four moderators of key relationships (gender, age, experience and

voluntariness of use). Venkatesh et al sampled for heterogeneity across technologies, industries, business functions, and nature of use (voluntary vs mandatory) to test the model. The empirical validation of UTAUT in the longitudinal study (Venkatesh et al, 2003) found the theory to account for 70% of variance in usage intention.

Follow-up studies in recent years still portray the robustness of the model. Yu, Tao and Yang (2007) used UTAUT to explore the behavior of 3G mobile communication users, and found that three of its constructs, performance expectancy, social influence and facilitating conditions were significant in predicting the behavior of users. A study by Alawadhi and Morris (2008) on the use of UTAUT model in the adoption of e-government services in Kuwait also validated three key factors of the model as predictors of intention to adopt the service. Research study by Oshlyansky, Carins and Thimbley (2007) validated UTAUT tool cross-culturally. These studies point to the effectiveness of the model.

Based on the insight derived from venkatesh et al (2003) theorizing and empirical analysis, and the recent validation of the key constructs of UTAUT, we will utilize three of UTAUT constructs (performance expectancy, effort expectancy and social influence) in our study. We will build upon Venkatesh et al (2003) framework to develop a Basic Social Media Model of scholars' usage of social media for educational purpose by adding two constructs (control belief, and community identity) as additional factors that influence the intention to use social media in higher education. We belief that accessibility to the Internet, cost effectiveness of IT and access, relaxed ethical regulations and government policy will induce European students to use the social media in education. On the other hand, the tendency of students' identifying a community identity by their common interests and needs in web 2.0 environment will motivate them to use the social media in learning.

Unlike Venkatesh et al, we introduce cultural dimensions to conceptualize the basic social media model that will elaborate the mediating effects of those dimensions on intentions to use the social media in higher education. Considering the mediating effects of culture on the use of social media in distance higher education is imperative because of the cultural significance of our study that is comparing the perspectives of Dutch institutions and United Kingdom institutions on issues relating to use of social media in higher institutions. Researchers in the past have acknowledged the role as well as the value of culture on the attitudes of individuals towards information technology. Culture is considered a vital factor that influences individuals' acceptance and use of Internet based learning resources (Collis, 1999) in (Li & Kirkup, 2007). Researchers, who study cross-cultural factors in IT use, agree that understanding a national culture (NC) is paramount to learning behavioral attitude towards information technology.

Research by Brosnan and Lee (1998) in (Li & Kirkup, 2007) hint that students' attitude towards computers and students' usage of the computers were associated to certain cultural background ideologies. In support of this view Makrakis (1992) in (Li & Kirkup, 2007) affirmed that individuals' culture and society play titanic role in

determining their attitude towards computers. Computer attitude scales developed to rate peoples' attitude towards computers, showed a significance difference in the scores of college students from United States versus Kuwait (Omar, 1992). Research efforts to understand the cultural significance of several communication technologies, including electronic meeting systems, e-mail, support group systems (GSS), videoconferencing, and a new breed of systems providing asynchronous support for group collaboration was made by Clark, Downing and Coleman (1996) as appreciated in (Gallivan & Srite, 2003).

The cultural difference between countries as it pertains to information technology acceptance is a highly researched domain. Leider, Carlsson, Elam and Corrales (1999) examined the influence of cultural differences on perceptions of executive information systems (EIS) use and decision outcome. Png, Tan and Wee (2001) compared the adoption of frame relay, a type of IT infrastructure between Japan and U.S using Hofstede's cultural framework, while Straub (1994) surveyed the effect of culture on IT diffusion of email and fax in U.S and Japan. These studies significantly show that culture is an important concept when it comes to the use of ICT. The concept of culture we are using in this study is based on the work of Dutch anthropologist Geert Hofstede who views culture as "a system of collectively held values." Hofstede (1980) introduced a model of national culture founded on a survey of more 120,000 respondents among staff of IBM taken from more than 50 countries and submitted four dimensions as a model to explain behavioral differences between nations. These four dimensions are: (1) Uncertainty Avoidance (UDI), (2) Individualism vs Collectivism (IDV), (3) Power Distance Index (PDI), and (4) Masculinity vs Femininity (MI). He later added Long vs Short-Term Orientation (see table 1 for more information on the five dimensions).

Table 1: Hofstede's cultural dimensions adopted from Kovacic (2005)

Power Distance	PDI	Power distance index is a cultural dimension developed by Geert Hofstede and it relates to the level of equality or inequality among individuals in a given country.
Individualism	IDV	Individualism is a cultural dimension initiated by Hofstede and it explains the level a society reinforces and respect individual or collective achievement, and interpersonal relationships that exist among people in such a society.
Masculinity	MAS	Masculinity is a cultural dimension developed by Geert Hofstede and it refers to the level a society reinforces, or does not reinforce, the conventional masculine work role model of male power, control assertiveness and achievement.
Uncertainty Avoidance Index	UAI	Uncertainty Avoidance Index is a cultural dimension developed by Geert Hofstede and it refers to the degree to which the individuals of a culture are made nervous by situations which the view unpredictable, unclear, unknown and unstructured.
Long-Term	LTO	Long-Term Orientation is a cultural dimension developed by

Orientation		Geert Hofstede and it refers to the society's disposition with thrift, perseverance, savings and the willingness to deprive one's self in order to achieve a goal.

Hofstede's framework has been widely criticized for portraying only a western way of imagining, but it still remains the most appreciated cultural model among scholars. The model has been shown to be stable and useful for a lot of studies across various disciplines. Recent study by Merkin (2006), validated Hofstede uncertainty avoidance dimension to be a strong predictor of ritualistic, harmonious, and aggressive facework strategies in embarrassing situation. Study conducted by Sornes, Stephens, Saetre and Browning (2003) on the reflexivity between ICTs and business culture confirmed the efficacy of Hofstede's four dimensional framework of national culture. The model predicted in Sornes et al the homogenizing of ICT among cultures.

Capitalizing on researchers' continued emphasis on the relevance of Hofstede (1980) framework, three of his national culture dimensions (individualism, power distance and masculinity) were utilized in the present study as mediators of scholars' intention to use social media in higher education. While Marcus, Baumgartner and Johanna's (2004) technological experience dimension, was used as the fourth mediator in our framework. Studies on Internet based applications have shown that technological knowledge is culture relevant and contributes to adoption and usage.

2.6 Conceptual model

In developing a conceptual model for the use of social media in higher education, one approach is to postulate that a number of determinant factors and mediating variables act in combination to process the students' intention to use (see Venkatesh et al, 2003). An alternative perspective, which builds upon this view, and the one that we adopt in this study, is that, whereas Venkatesh et al (2003) three key factors (performance expectancy, social influence, and effort expectancy) influences intention to use, two additional factors (community identity) as explained in a proposed model for usage of social networks in education (Mazman & Usluel,2009), and (control belief) consistent with integrated research model (see Tetiwat & Huff, 2002) are also important predictors of intention to use the social media in higher education. Using this approach, we will explain these sets of factors that influence scholars' intention to use social media in higher education. To the level that these factors can influence individual's intention is moderated by cultural dimensions. Our theoretical framework (view fig.3) is developed in detail next.

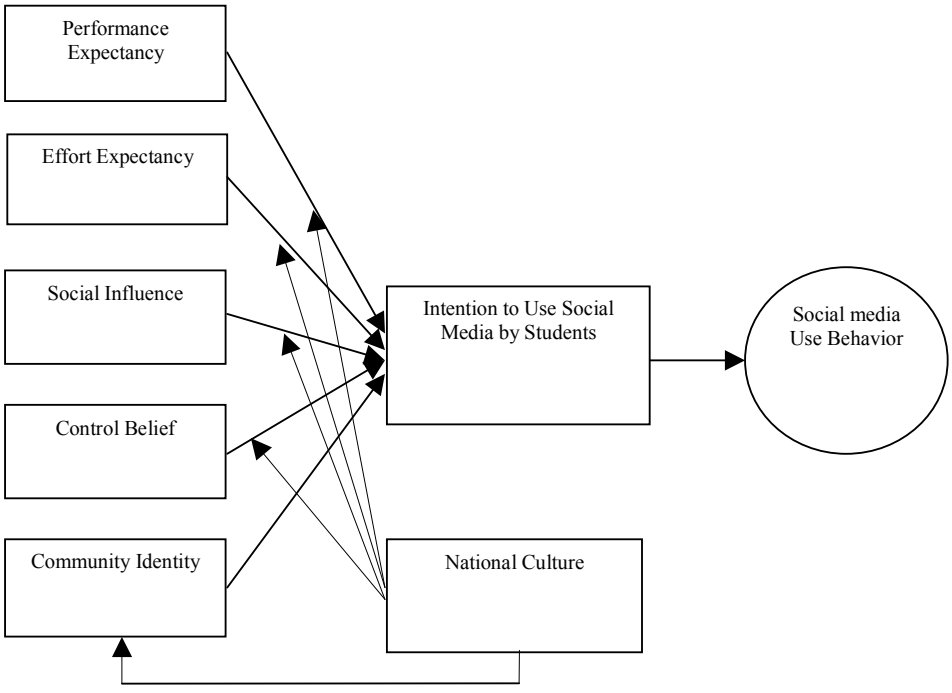


Figure 2: Basic Social Media Model

2.5.2 Performance Expectancy factor

Performance expectancy factor as envisioned by Venkatesh et al (2003) is the level to which an individual thinks that using a system will aid him or her to achieve gains in job performance. Five key constructs from the different models that relate to performance expectancy are perceived usefulness (TAM/TAM2 and C-TAM-TPB), relative advantage (IDT), extrinsic motivation (MM), job-fit (MPCU) and outcome expectation (SCT). These constructs within each single model is the strongest predictor of intention and have being found to be consistently significant across studies (Venkstesh et al, 2003; Yu et al, 2007; Oshlyansky et al, 2007; Alawadhi & Morris, 2008). However, from a theoretical view point, we have reasons to expect that the relationship between performance expectancy and intention to use social media in higher education among students' in EU higher institutions will be mediated by the cultural dimension of individualism. Van Birgelen et al (2002) in Sornes et a l., (2003) are of the view that individualistic cultures are more innovative and trusting in exchange relationships with external parties. Veiga, Floyd and Deschants (2001) in Sornes et al., (2003) adjudged that individualistic culture will perceive a new IT to be useful if it enhances performance. Individualistic cultures pay more attention to performance of the individual, and attach importance to time management. As a result any technology that can help people be more effective and productive such as the social media will be regarded highly and attractive to use in education. Studies also show that individuals in individualistic countries are at liberty to express their opinion, and therefore have the propensity to innovate and adopt ideas. Thus, we expect that the influence of performance expectancy on intention to use social media will be mediated by individualism.

2.5.2 Effort Expectancy factor

Effort expectancy is the level of ease related with the use of a system. According to Venkatesh et al (2003), three key constructs from already established models capture the idea of effort expectancy complexity (MPCU), perceived ease of use (TAM/TAM2), and ease of use (IDT). Research studies by Agarwal and Prasad (1997) and Davis et al (1989) both in Venkatesh et al (2003) confirmed the significance of effort expectancy constructs. Expert surveys by Marcus et al (2004) suggest that technological experience is a significant cultural dimension that strongly influence societal attitude towards technology. The EU nations are next to America in terms of technological advancement. On this ground, we presume that the relationship between effort expectancy and intention to use the social media in higher education will be mediated by technological experience.

2.5.3 Social Influence Factor

Social influence is the level to which an individual comprehends that important others think he or she should use a new system. Social factor in (MPCU), image (IDT) and subjective norm (TRA, TAM2, TPB/DTPB and C-TAM-TPB) represents constructs found in social influence. Studies have shown that social influence has been a strong predictor of intention at early adoption of technology which makes the construct somewhat controversial. Study by Zmud (1982) suggests that the rate of innovation adoption is higher among culture with low power distance. Europe is a continent of low power distance. This cultural characteristic is anticipated will mediate the relationship between social influence effect on the intention to use the social media in higher education. The European scholars will be more attracted to use the social media in higher education because they feel others are using it, and by implication are expected to use it too. In a low power culture equality is the order of the day, but image is equally appreciated.

2.5.4 Control beliefs factor

Control beliefs have being described by Teliwat and Huff (2002) as one of the major factors that influence the adoption of technology for educational purpose. Control belief is the presumed feelings that access, availability and compatibility of technology with the existing value will enhance intention to use information technology. The key constructs that formed the control beliefs factor are accessibility to IT, cost of IT, availability of IT, language barrier, ethical consideration, institution policy, management support and government policy. Control belief was found to be significant in predicting intention to adopt web-based educational technology among New Zealand educators (Teliwat & Huff, 2004). The effort made by EU and the crash in the market cost of ICT related facilities, coupled with increased access to the Internet among EU nations have increased technological experience among citizens. This factor will impact on the relationship between control belief and intention to use the social media in higher education. Thus, we propose that control belief and intention to use of social media in higher education will be mediated by technological experience.

2.5.5 Community identity factor

Sense of community is the level of impression that members have of belonging, a belief that members matter to one another and to the group, and a shared trust that members' aspirations will be attained through joint effort (Mcmillian & Chavis, 1986) in

(Mazman & Usluel, 2009). The constructs that make up community identity includes, identification, self-discovery, and maintenance of interpersonal connectivity. Although not yet subjected to much empirical test to validate the significance of the construct, we are of the opinion that masculine nature of European nations will mediate the relationship between community identity and intention to use the social media in higher education. Being a masculine continent, scholars will like to use the social media to assert their educational abilities, and maintain interpersonal connection among peers.

2.5.6 Hypotheses

To test our model we hypotheses that;

H1: We can predict that a significant number of students' in European higher institutions use the social media for educational goals.

H2: There are significant differences in the distribution of social media use across national institutions.

H3: We predict that the association between each of the determinant factors and intention to use social media is mediated by Hofstede's dimensions.

Chapter Three
Research Methodology

3.0 Introduction

This chapter reports methods and techniques used in the collection and analysis of data. These comprise the research design, study population, sample and pilot testing of research instrument, data collecting instruments, and collection procedure and the method of data analysis.

3.1 Research Design

A research design is the binding factor that keeps the research project together. According to McMillan (2000), a research design is used to structure the research, and to portray how component major parts of the research function together to try to address the central research questions. The design adopted for this study comprises of analytical survey design, the correlational and causal-comparative research design.

The analytical survey according to (Gray, 2004) seeks to test a theory in the field, its goal being to test and explore associations among variables. Analytical survey as Oppenheim (1992) in (Gray, 2004) highlights assume a typical features of experimental research when it comes to handling these variables. The design approach is most suitable in a study such as this that the anticipated sample size will be relatively large.

Correlational research design as McMillan (2000) points out is used to report the statistical association between two or more variables. The correlational research design helps the researcher to establish if there is a relationship between two or more variables. In addition, it helps in determining the strength of relationship. Correlational research design will be used to establish the kind of association between the key determinant factors and the moderating factors and how they impact on behavioral intention to use social media in higher education.

According to (Creswell, 2002) causal-comparative research design is a kind of non-experimental design in which researchers attempts to discover cause-effect relationships by targeting groups of people in whom the independent variable is absent or present and then ascertaining if the groups differ on the dependent variables. This type of research design is relationship focused. Therefore the causal-comparative research design will address the differences in perceptions, motivation, and the use of the social media in higher education among the European nations.

3.2 Target Population

The target populations for this study cover undergraduate students and Master students in selected higher institutions in The Netherlands, Great Britain and Ireland. There are altogether five institutions, University of Twente, Saxion University of Applied Sciences, University of Teesside, University of Aberdeen, and University College Cork Ireland.

3.3 Sampling and sampling procedure

The sampling units are full time undergraduate students and master students of any of the departments of media and communication studies, marketing, business studies, psychology, and education department of the selected institutions. Purposive sampling was adopted in selecting the participants for the study. The purposive sampling according to Gray (2004) can give one or more trait representative of sample, which can lead to true cross section of the population. With a purposive sample, a researcher is likely to get the opinions of his target population; he also has the tendency to overweight subgroups in his population that are more readily accessible. The nature of the current study makes it the most suitable.

3.4 Limitations of sample

The sampling model, specific to institutions in the Netherlands, Great Britain, and Ireland, is not representative of other higher institutions of learning in entire Europe. Thus the results of the study and any inferences drawn may be implied only with reference to these countries surveyed.

The sample selection for the survey allows for generalizability, only to the point of these countries involved. The study measures the attitude of the students of the selected institutions in these countries and hence the imposition of the outcome of the study with reference to the three countries on entire European higher institutions is not valid. However, data available in the form of response compatibility among students from other European countries whose nations are not captured in this present study may serve to allow for generalization to other European countries.

3.5 Research Instruments

Quantitative method concerns numerical measurements, which comprises various types of data collection tools: checklists, surveys and questionnaires. This method do not

go without some advantages and disadvantages, thus, Weiss (1998) points that the quantitative method has the benefit of permitting the researcher to attain conclusions with a known level of confidence about the extent and making of exact statements. The positive advantage of the method will be utilized in this study.

Research instrument used for this study was questionnaire. The questionnaire was used to elicit reliable and valid data as far as perceptions of social media in higher education in European countries are concerned.

3.6 Questionnaire

The questionnaire was composed largely of closed-ended questions focusing on factors that contribute to the use, and use of social media applications in higher institutions. It is grouped into three sections. The first part consists of validated instruments adapted from prior studies used to measure performance expectancy, effort expectancy, social influence, control belief, community identity and behavioral intention. The items used to measure performance expectancy, social influence and effort expectancy, were adapted from Venkatesh et al., (2003). Some of the items used in this section include items like, I find the social media useful, using the social media enables me to accomplish most of my educational task quickly, I find social media easy to use etc. Students are required to rate these items in a 5 point scale raging from strongly disagree = 1 to strongly agree = 5. The items for behavioral intention and user behavior constructs were adapted from Moon and Kim (2001) research work. These items have been modified to make them relevant to the social media context.

The second part of the questionnaire includes questions adapted from Hofstede's cultural dimensions items, altered to suit social media context. Students are expected also to rate items in this section on a 5 point scale raging from strongly disagree = 1 to strongly agree = 5. Some of the items used in this section include; it is important to me that I contribute more than others in group discussion of my social network, I am skillful in using the web to download podcast, an institutions' ICT policy can be broken when a students think it is to his best interest, Both men and women are often rationale in contributions they make in a social networking group.

The final section is composed of questions adapted from the 2008 survey questionnaire from the ECAR research study on students and information technology in higher education (Salaway, Caruso, Nelson, Ellison & Nicole, 2008). This section included questions such as; what is the current use of social media for educational activities? How frequent do you use social media applications for educational goals? Which of the social media applications do you use most to attend to your educational issues?, and other relevant questions aimed at eliciting information about general use of the social media in higher education.

3.7 Piloting and Validation of questionnaire

Researchers have expressed concern on the relevance of piloting and validating research questionnaire. Gillham (2000) in Gray (2004) propose that it is proper to pilot at least 50 per cent more questions than one requires so that unreliable and incomprehensible questions can be eliminated. Gray (2004) further stresses the importance of piloting, and argued that basically all the content of the questionnaire should be taken into consideration when piloting a questionnaire.

For the purpose of this research study, the questionnaire was tested using 10 students that shares similar characteristics with the target respondents, who filled the questionnaire in the presence of the researcher and made valuable suggestions that could improve the quality of the questions. The questionnaire was further scrutinized by two experts that raised relevant issues bordering on the length of the questionnaire, quality of questions on individual items, redundancy of questions, tone, presentation, and formality or informality of the questions. Adjustments were made accordingly before the questionnaire was administered.

3.8 Data collection procedure

In order to solicit maximum cooperation from the respondents, contacts were made with University researchers who have interest in social media to enlist students for participation. The link to the online questionnaires was delivered to participants through the email address of the students enlisted. This method helped to reduce cost and ensured high response rate as most participants' prefer online response compared to pencil and paper method.

3.9 Reliability of instruments

The first analysis is to measure the reliability of the instruments. Data from 385 respondents were used for this purpose. There are some respondents who did not give answers for some items. These missing values are replaced by the mean score of the data on that item and used for statistical analysis. The reliability of all scales was probed by computing a cronbach's alpha. Represented in Table 2 is the result of the reliability test for each scale.

Table 2: The reliability of subscales

Scale	Reliability: Cronbach's alpha
Performance Expectancy	0.881
Effort Expectancy	0.896
Control Belief	0.626
Social Influence	0.882
Individualistic Cultural Index	0.925
Technological Experience	0.806
Power Distance Index	0.716
Intention to Use	0.877
Use Behavior	0.907
Learning Experience	0.892
Community Identity	0.891
Masculinity Index	0.834

All items in different subscale appeared to be worthy of retention; except for Control belief that the greatest increase in alpha (0.626) would come from deleting item 1. Although this is below cut off of 0.7 (Nunnally, 1978), we retained the variable due to its relevance to our proposed model. The Cronbach's alpha for Social influence also increased from 0.839 to 0.882 when the first item in its scale was deleted. When all the Measurement instruments were considered together, the Cronbach's alpha reliability was .837, which is far above the cut off threshold.

Chapter Four
Data Analysis

4.0 Participants

The online questionnaires were administered to University students in Germany, the Netherlands, United Kingdom and Ireland. The students were recruited through the help of researchers who agreed to collaborate in the study.

A total of 385 respondents made attempt or filled the online questionnaire. Only those institutions that had up to 18 respondents that completed the questionnaire were left in for our analysis (View table 3). This meant that Northumbria University with (9) respondents, Hamburg University (7), and Bochum University (4) were not used in for further analysis. Of the remaining sample, participants were included in the analysis if their questionnaires were completed and no suspect data pattern were found; that is questionnaires with more than five questions missing or questionnaires were the participants gave the same answer to all questions were thrown away. In the same manner, only European native participants in the institutions sampled were used in the analysis to ensure a true representative, homogenous European culture in the sample. In all, a total of 237 participants representing (61.6%) met our selection requirements. Table 3 gives a resume of the data collected from those institutions that met the selection requirements.

Table3: Distribution of participants across Participating institutions.

Name of the Institution	Total sample	Rejected data	Used data
Saxion University of Applied Science	115	68	47
University College Cork Ireland	84	11	73
University of Teesside	44	26	18
University of Twente	101	24	77
University of Aberdeen	21	1	20
Total	365	128	237

In order to avoid multicollinearity that may arise using small sample size, we compared the responses of the participants from the University of Teesside, University of Aberdeen, and University College Cork Ireland, and aggregated them into United Kingdom institutions in our analysis having found that, there were no significant differences in responses of the participants across the institutions. The University of Twente and Saxion University of Applied Sciences formed the Dutch institutions. In all, a total number of 48 females and 65 males with average age of (M=2.1452) and (SD = 0.37598) responded from the United Kingdom institutions, while 75 females and 51

males with mean age of (M = 2.4956) and (SD = 0.53659) fully completed the questionnaire among participants of Dutch institutions.

4.1 Data analysis

The analysis was done at the participant's level with scores for each participant against each measurement constituting the unit of analysis. The key determinant factors, cultural dimension indexes, use intention, use behavior, and learning outcome scores are represented by independent scores for each participant.

The analysis was based on the summary measures of Dutch institutions participants' assessment, and United Kingdom institutions participants' assessment. The grading on the 73 rating items was summarized as a total score for each participant. The expression of responses to scores was based on the preset and evaluated scale of 1- 5, where the response strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, and strongly agree = 5. The participants' rating was hence computed over a total weighting for each of the item. Averages were computed for rating items on the participant questionnaire matching to the indicators represented in the questionnaire.

4.2 Overall analysis of relationships

In order to investigate if students of European higher institutions use the social media for educational goals, their perceptions of the social media as it relates to learning, and to assess similarities and differences across higher institutions, the following analyses were carried out.

A descriptive analysis was done to find the percentage of students that testify to the current use of the social media in European higher institutions, and actual usage. The mean scores of the students were computed for learning outcomes associated with social media to gauge their perceptions about the impact of the social media applications on their learning abilities. Comprehensive descriptive analysis comparing institutions was done to see if discrepancies exist among institutions.
To achieve these objectives, the data set used for the analysis was normalized so that direct comparison can be made between Dutch higher institutions that has the highest number of participants (124) and United Kingdom institutions with (113) participants. The normalization factor = 0.91129. In order to allow for direct comparison of the two Dutch higher institutions, Saxion University of applied sciences with (47) participants and University of Twente (77), the data set for the two Dutch institutions was normalized. The normalization factor for the two Dutch institutions = 0.61039.

4.3 Regression analysis to study the mediating effect of Hodstede dimensions

Exploration of the predictive powers of the determinant factors on intention to use social media was carried out using correlation analysis. Regression analyses were further undertaken to establish the mediating effects of Hofstede's dimensions on the association between the determinant factors and intention to use.

4.4 Limitation of the study

Although concerted effort was made through the procedures undertaken in collection of the data to ensure the validity and reliability of the responses described. Issues relating to comparability of the study to entire higher institutions in European countries demand in depth probe beyond the scope of this study. For the fact that the survey is a one time measure of participating institutions' perceptions, and motivations, the measurements are at best valid only with regards to the specific target populations represented by the sample. Care should be exercised in inference of the findings beyond the limit of the study to indicate trends across nations, in consideration of comparability issues of the findings across higher institutions in other European countries. In addition, the issue of multiple completions cannot be ruled out as the questionnaire was administered online.

4.5 Ethical consideration

In conducting this survey research to ascertain higher education students' perception, motivation and learning outcome with social media, respondents confidentiality were guaranteed, as issue of privacy is one that hinder cooperation among participants. Provision was made, allowing our participants to use anonymous username and password to access our online questionnaire. Ethical clearance was sought and approved in some of the institutions that require that such approval is obtained before a researcher is allowed to use the institution's students for research purpose.

Chapter Five
Results

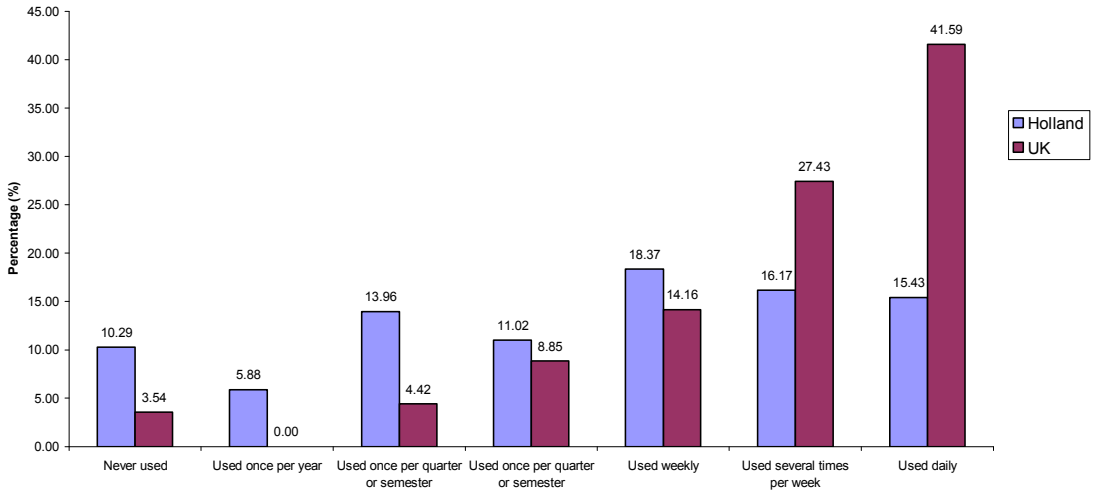
5.0 Introduction

We presented the results of the descriptive analysis in section one relating to the analysis undertaken to address the first two research questions. The second section presented the reports of regression analysis that evaluated mediating effect of culture in the association between determinant factors and intention to use social media for education.

5.1 Current use of social media in higher education

What is the current use of the social media applications for education in your institution? To provide answer to this question, students were asked to testify, if at all they observe the use of web 2.0 applications for educational goals in their institutions.

Figure 3: Current use of social media in higher institutions



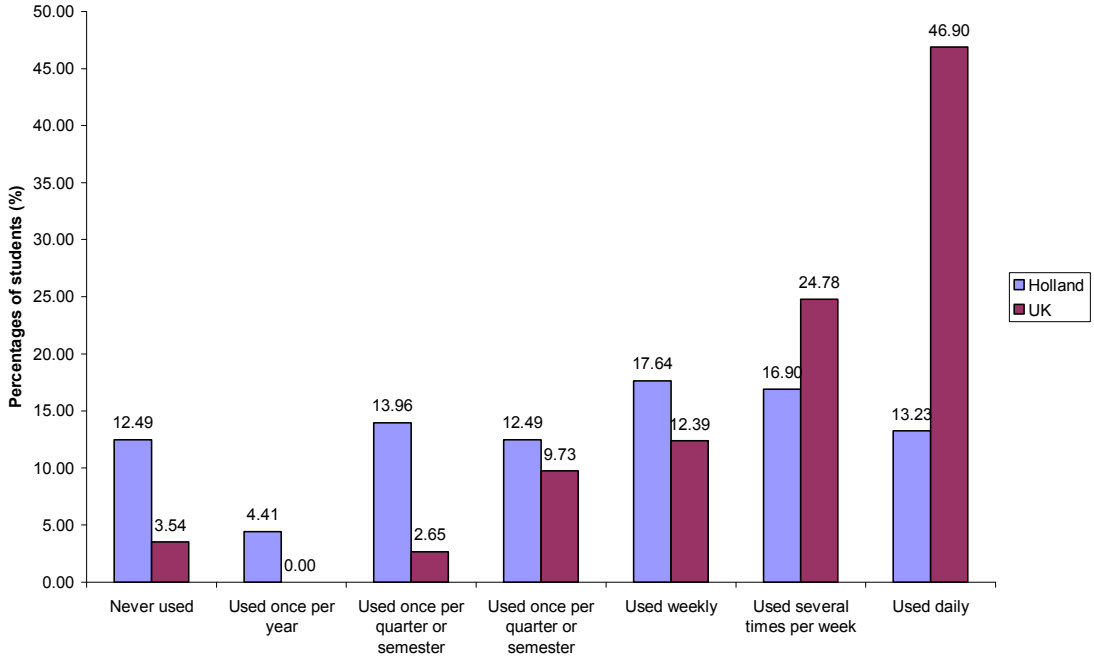
The majority of students testify that the social media applications are increasingly being utilized for educational purposes in their institutions on weekly, several times weekly, and on daily bases. The strongest factor associated with whether students observe

several times weekly or daily utilization of social media is the institution of the students (see figure 4). Most Netherland institutions' students have observed several times (16.17%) to daily (15.43%) use of the social media for educational goals, but more students of Great Britain institutions' students reported higher observation of its utilizations several times weekly (27.43%) to daily (41.95%) use of social media for learning purpose.

5.1.1 Frequency with which students use social media for educational activities

How frequent do you use the social media for educational activities? To answer this question, students were asked to indicate the rate with which they use social media to attend to issues relating to their education.

Figure 4: Frequency of use of the social media for educational activities

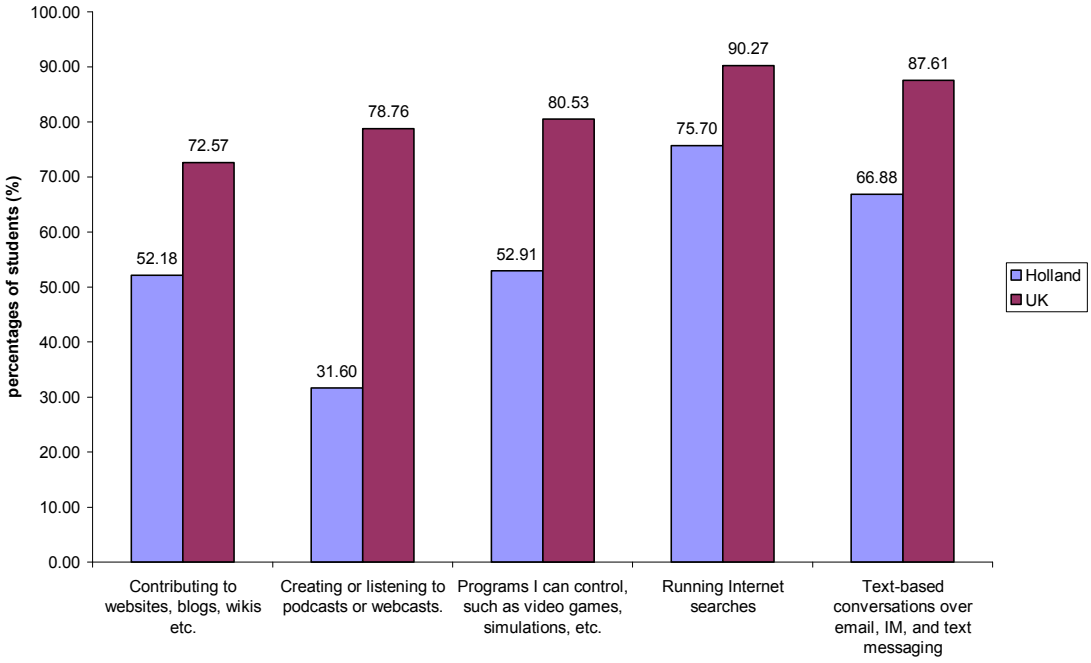


The results indicate that a reasonable number of students use the social media for educational activities with the highest number of those who use it concentrated among weekly, several times weekly, and daily users of the applications. The strongest factor associated to whether students use it on weekly, several times weekly or on daily bases is the institution of the students (view figure 5). The results indicates that the United kingdom institutions has the highest number of daily users of the applications (46.90%), and the least number of those who never used the applications for educational goal (3.54%), when compared with Dutch institutions with 13.23% of daily users, and 12.49% of those who never used the applications for any educational purpose.

5.1.2. The Web 2.0 applications European students like to learn through

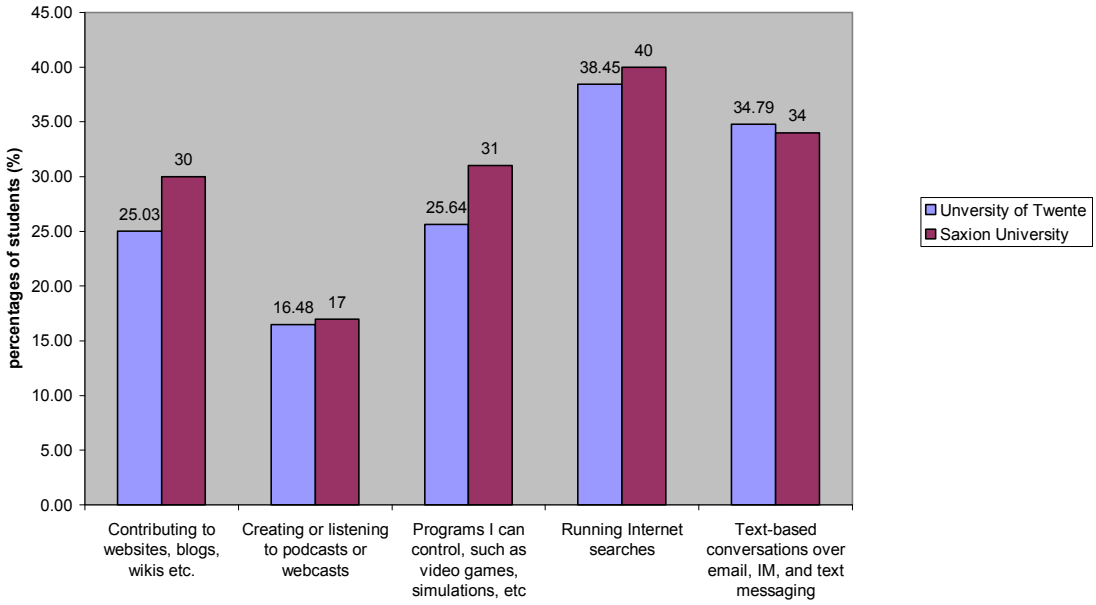
Which of the following web 2.0 applications would you like to learn through? In order to provide solution to the question, students were asked to indicate the applications they would want to learn through.

Table 5: Students' prefrence of applications to learn through



The results indicate a pattern of consistency in web 2.0 applications that students of European higher institutions like to learn through except for creating and listening to podcast or webcasts where Dutch students showed a very low attraction to (view table 6). Although consistencies exist, students from Great Britain are significantly more interested in learning through all the applications compared to their Netherlands counterparts. The same patterns of responses were maintained when the two Dutch institutions were compared (view table 7). The result indicates that students of Saxion University of applied sciences are slightly more inclined to learn through social media applications than the University of Twente students in all cases except for text based conversations over email, instant messages, and text messaging (see figure 7).

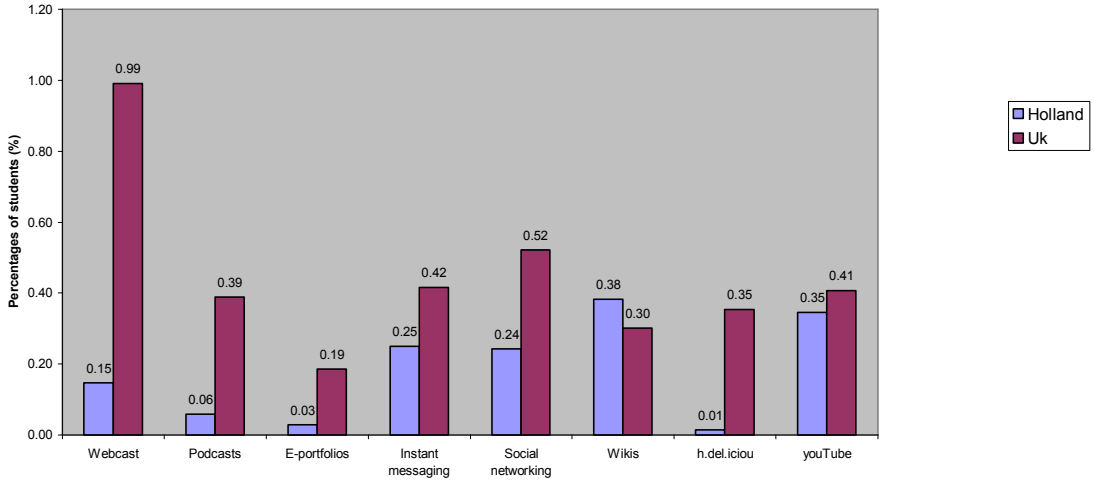
Table 6: Students prefernce of applications to learn through



5.1.3. The most used social media application in educational activities.

Which is the most used social media application among European students? To provide answer to this question, students were asked to indicate by ticking all of the social media applications they are using for educational purposes.

Figure 7: Most used social media applications in institutions



The results indicate that the most used social media application vary according to institutions. For United Kingdom institutions, students use the webcast most (0.99%), followed by social networking applications (0.52%). Unlike the United Kingdom, Dutch students prefer to contribute to wikis and use youTube for educational purposes than using the webcast (see figure 6).

5.1.4. Students perceptions of the impact of social media applications on learning outcomes.

What is your perception about the impact of social media applications to learning outcomes? To answer this question, the students were asked to rate six outcome statements that will reveal their perceptions about the impacts of social media applications on their learning abilities.

Table 4: Students' perceptions of the impact of social media applications on learning (Dutch and UK institutions compared).

Institution of Participants		After using the social media, I have acquired skills on how to use information technology effectively for learning.	After using the social media, I have learned how to get along in group assignment with different kinds of students	I acquire useful knowledge and skills related to my subject area after using the social media.	I have developed my ability to think critically about different viewpoints by using the social media.	I integrate and apply the knowledge I gain through the social media in problem solving.	I learned how to think and reason logically and analytically after reading and making a social media contribution	Using the social media makes me to become an effective member of a group (teamwork skills).
Dutch Institutions	Mean	3.56	3.28	3.54	3.52	3.42	3.14	3.22
	N	124	124	124	124	124	124	124
	Std. Deviation	.886	.924	.790	.941	.817	.914	.992
United Kingdom Institutions	Mean	3.81	3.85	3.82	3.81	3.70	3.78	3.82
	N	113	113	113	113	113	113	111
	Std. Deviation	1.216	1.020	.956	.941	1.025	.874	.876
Total	Mean	3.68	3.55	3.68	3.66	3.55	3.44	3.50
	N	237	237	237	237	237	237	235
	Std. Deviation	1.061	1.010	.883	.950	.931	.949	.984

**scale: Strongly agree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5.

Table 4 shows that student' perceptions about the impact of social media applications vary slightly on the basis of students' institution. Overall actual differences between United Kingdom and Dutch institutions are small, and the pattern of responses is similar for each of the six outcome statements. Both Dutch and United Kingdom institutions are somewhat positive about the value of social media applications to their learning abilities.

Table 5: Students' perceptions of the impact of social media applications on learning (UT and Saxion Compared).

Institution of Participants		I acquire useful knowledge and skills related to my subject area after using the social media.	I have developed my ability to think critically about different viewpoints by using the social media.	After using the social media, I have learned how to get along in group assignment with different kinds of students	I integrate and apply the knowledge I gain through the social media in problem solving.	I learned how to think and reason logically and analyticall y after reading and making a social media contributio n	Using the social media makes me to become an effective member of a group (teamwork skills).
Saxion University of Applied sciences.	Mean	3.57	3.55	3.38	3.43	3.17	3.21
	N	47	47	47	47	47	47
	Std. Deviation	.744	.829	.874	.773	.940	.883
University of Twente	Mean	3.65	3.58	3.34	3.49	3.21	3.34
	N	77	77	77	77	77	77
	Std. Deviation	.823	1.005	1.008	.868	.978	1.071
Total	Mean	3.62	3.57	3.35	3.47	3.19	3.29
	N	124	124	124	124	124	124
	Std. Deviation	.792	.939	.956	.831	.960	1.002

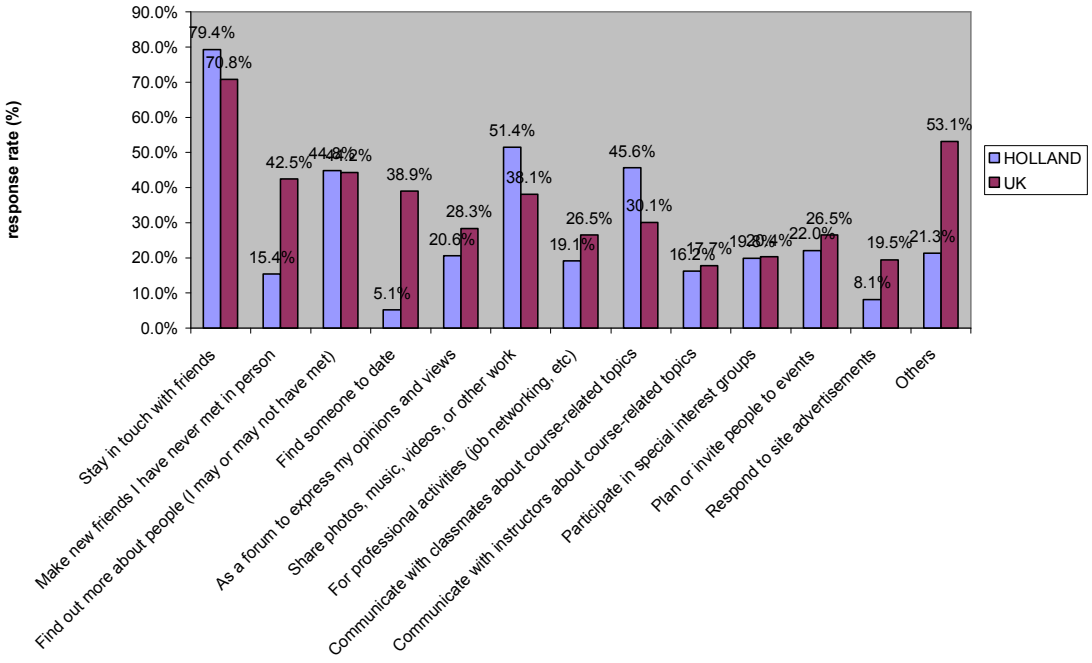
**scale: Strongly agree = 1, Disagree = 2, Neutral = 3, Agree = 4, strongly agree = 5.

The results indicate that the response patterns for the outcome statements about students' perception of the impact of social media applications on improvement of students' educational abilities are consistent across the two Dutch institutions. The students of the two institutions are positive about the value of social media applications to their learning abilities.

5.1.5. How students use the social networking websites

What do students of European higher institutions use the social networking sites for? To provide answer to this question, students were asked to indicate purposes for which they are using the social networking sites.

Table 8: what students use the social networking sites for



The results indicate inconsistencies in the use of social networking sites across European higher institutions. Both United Kingdom students (70.8%) and Dutch students (79.4%) use the social networking sites most to stay in touch with friends. The students from both countries also share common interest when it comes to the issue of using the sites to find more about their friends (44.3% vs 44.2%). On the contrary, Dutch students (51.4%) use the social networking sites more to communicate with their classmate about course related issues than United Kingdom students (36.1%). The United Kingdom students relate more with their instructors using the social networking sites than their Dutch counterparts (view table 8).

5.2Testing for the mediating effects of Hofstede's dimensions

To begin, we need to establish three conditions in order to determine if Hofstede's dimensions mediate the association between the determinant factors and intension to use, first we test if each determinant factors predicts intension to use, secondly we test to see whether each determinant factors predicts each corresponding mediator, and finally we will test to see if the mediator predicts the outcome variable (intension to use). Using the

Sobel test calculator for significance of mediation, we will check whether Hofstede's dimensions have significant mediating effects.

5.2.1 Analysis of whether the five determinant factors correlate with intention to use.

The correlations analyses of the five determinant factors with the outcome variable (Intention to use) were computed using SPSS to assess the degree and direction of relationship.

We based the results of the correlation analysis on the individual mean scores of participants in each of determinant factors' measurements. Pearson's correlation coefficient "r" is used to report the results of the correlation.

The outputs of the correlation analysis show significant correlations between some of determinant factors and intention to use (view the appendix for details). The correlation coefficient for each of the part, that is the link between each of the determinant factors with intention to use, is statistically significant except for Effort Expectancy that failed to correlate with intention to use, and will not be used for further analysis. The association between intension to use and the determinant factors were not all that strong and for this reason will not result to multicollinearity.

5.2.2 Regression analysis to test the predictive power of the determinant factors on Hofstede's dimensions.

In all cases, the regression analyses indicate that each of the determinant factors has predictive power on the accompanying Hofstede's dimension. The regression coefficient for the association between Performance Expectancy and Individualism Index (mediator) is .59 with standard error of regression coefficient .07. The regression analysis investigating the association between social influence and power distance shows that the regression coefficient for the association is .15, and the standard error of the regression coefficient is 0.05. Similar regression analysis reports that the regression coefficient for the association between control belief and technological experience (mediator) is .16 with standard error of regression coefficient of 0.10. Finally, the regression analysis evaluating the predictive power of community identity on masculinity index indicates that the regression coefficient for the association is 0.27, and the standard error of the regression coefficient is .05.

With the second condition mention in section 5.0 fulfilled, we proceed to test whether the mediators have predictive power on intention to use.

5.2.3 Regression analysis to test the predictive power of Hofsede's dimensions on intention to use social

The results of the regression analyses for the associations between Hofstede's dimensions and intentions to use clearly indicate that all the four dimensions have predictive power on intention to use. The regression coefficient for the association between individualism index and intention to use while controlling for performance expectancy is 0.10, while the standard error for regression coefficient is 0.04 (view the appendix for diagram). The regression coefficient for the association between power distance index and intention to use controlling for social influence is 0.3 and the standard error of regression coefficient is 0.6. The regression analysis investigating the predictive power of technological experience on intentions to use while controlling for control belief is 0.3, and the standard error of regression coefficient is 0.05. Similar analysis aimed at assessing the predictive power of masculinity controlling for community identity indicates that the regression coefficient for the association is 0.3, with the standard error for regression coefficient of .06.

5.2.4 Using Sobel test calculator for the significance of mediation

The calculator is used to test to assure whether the mediators significantly conveys the effect of the determinant factors on intention to use, that is, if the indirect influence of each determinant factors on the intention to use through the mediators (Hofstede's dimensions) are significant.

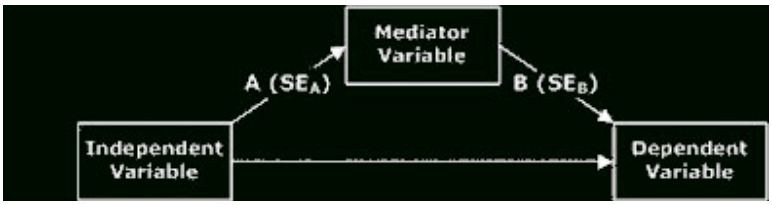


Figure 9: Adapted from Danielsoper.com

5.2.5 Parameters used to test the mediating effect of Individualism index on the association between performance expectancy and intention to use

A:	0.6	The regression weight (regression coefficient) for the relationship between the performance expectancy (independent variable) and individualism index (mediator).
SEA:	0.07	The standard error of the relationship between the performance expectancy and the individualism dimension.
B:	0.10	The regression weight (regression coefficient) for the relationship between the individualism index and intention to use (dependent variable).
SEB:	0.04	The standard error of the relationship between individualism index and intention to use.

Calculate

Sobel test statistics = 7.442084 with associated p- value of 0.001 significant at $\alpha = 0.05$.

Subsequent sobel test statistics (not shown for space) indicate that Hofstede's dimensions were all through significant of mediation. The results indicate that power distance index significantly tell the effect of the social influence on intention to use at t = 2.572479, with p- value = 0.005. The analysis shows that the indirect influence of control belief on intention to use through technological experience is significant at t = 1.856953 with an accompanying p-value of 0.03 less than alpha at 0.05. The calculation further revealed that masculinity index significantly conveys the influence of community identity on intention to use at t = 3.668803 with associated p-value of 0.001.

Chapter Six
Discussions

6.0 Introduction

Based on the theory of User Acceptance of Information Technology (UTAUT) offered as a unified view of technology acceptance, this study explored the predictive power of UTAUT constructs relative to its relationship with Hofstede's cultural framework as mediator variables that affect students' intention to use social media in higher education. It also studied students' perceptions and use of the social media for educational purposes.

The discussion will be based on the three main research questions addressed in the study and presented in three sub-sections, 6.1 – 6.3 each of which comprises discussion on evaluation and interpretation of results obtained from our analyses.

6.1 Discussion of the first research question

Hypothesis was formulated to serve as a guide and provide answer to the first research question; do students of European higher institutions use the social media for educational Purpose? If they do, what is their perception of social media applications on learning outcomes?

The results of the descriptive analysis to test the first hypothesis confirmed our prediction that a significant number of students in European higher institutions are making use of social media applications for educational activities.

Majority of the students (84.1%) put together, from the Great Britain confirmed they make weekly, several times weekly, and daily use of social media applications for educational goals. Quite a good number of students from the Netherlands (47.8%) use the social media tools on weekly, several times weekly, and on daily bases for educational goals. These percentages are quite reasonable when contrasted with 12.9% and 3.5% of Netherlands and Great Britain students that confirmed they have not used the social media tools for educational goals before.

The results of the computed mean scores of students learning outcomes indicate that students from Great Britain as well as the Netherlands perceive social media applications to be having positive impacts on their learning abilities. The students disclosed that they acquire skills, knowledge, learn how to reason and think critically after using the social media applications for learning. These discoveries further strengthen our view not to reject the first hypothesis, as European students do not only use the social media tools, but are gaining immensely from its usage. The findings of this

study underscore Bryant (2006) views that web 2.0 applications offer significant possibilities for learners who have needs to enhance their learning experience through enriched interactions. The affirmation by the students that social media helps them to reason critically confirms Safran, Helic and Gutl (2007) opinion that web 2.0 applications have capacity to preserve critical and analytical thinking.

6.2 Discussion of the second research question

The discussions in this section relates to the results of descriptive analyses to explore the differences in the use of social media that will address the second research question; Are there differences in distribution of social media use in European higher institutions?

Results of detailed descriptive analyses clearly support our second hypothesis that significant differences exist in the use of social media applications for educational goals across national institutions in Europe.

The result of the descriptive analysis that assessed whether students in European higher institutions use the social media for educational activities shows that students from institutions in Great Britain have higher inclination to use social media than their Netherlands counterparts. Greater percentage of students in United Kingdom (46.9%) uses the social media daily to attend to educational issues compared to the students in Netherlands, where scanty number (13.2%) makes use of the social media daily for educational goals.

The report analyzing students' preference of social media applications to learn through indicates that while greater percent of British students (78.8%) like to learn through creating and listening to podcast or webcast, their Netherlands counterparts are less inclined to learn through them. Only 31.6% of the entire students in the Netherlands would want to learn through creating and listening to podcast or webcast. No significant difference was observed when the two Dutch institutions were compared on students' attitude toward podcast and webcast.

British and Netherlands students differ also in social media applications they use most for educational purposes. While British students' uses the webcast most, consistent with their earlier indication that they like to learn through creating and listening to webcast or podcast, their Netherlands counterparts prefer to contribute to wikis most. This could be interpreted that the two nation shares different perspectives about learning because of differences in national culture. Study by Woodrom (2001) hints that culture impact assumptions about meaning of learning and ways of learning within different cultural circumstances.

Significant variations on interest to use other social media applications by institutions were observed. The British students' are significantly more disposed to use instant messaging, E – portfolio, h.del.icious and youTube than Netherlands students for educational activities (see figure 5). These findings further strengthen our earlier decision

not to reject the second hypothesis that discrepancies exist in the way social media applications are used across national institutions in Europe. These differences could be interpreted from cultural perspective. Study by Marakis (1992) affirms that individuals' culture and society play enormous role in determining their attitudes towards technology.

Another contrasting trend between British and Netherlands students is the differences in use of social networking sites as it pertains to education. The Netherlands students (45.5%) use the social networking sites more to communicate with classmate about course related topics when compared with their British counterparts (30.1%). British students on the other hand prefer to communicate with their instructors more using the social networking sites than the Netherlands students do. No sharp contrast was observed when the two Dutch institutions were compared. The result suggests that cultural contexts affect the way students perceive learning environment as (Zhu, Valcke & Schellens 2009) observed. Study by Woodrom (2001) highlights that cultural belief and traditions affect how students learn.

Despite these wide discrepancies, both British and Netherlands students share similarities on their perceptions about the impact of social media applications on their learning abilities. In all the six outcome statements used to gauge their views, students from both national institutions were positive about the perceived impacts of the social media on their learning skills. In addition, the preference pattern about which social media applications the students would like to learn through were consistent across national institutions. Apart from the differing views concerning creating and listening to podcast or webcast, the ratings of the applications the students would want to learn through share similar pattern in both national institutions.

6.3 Discussion of third research question

Hypothesis was formulated to serve as a guide and provide answer to the third research question; do Hofstede's dimensions apply to ways the social media applications are used in higher institutions?

The results of the test statistics for the Sobel test confirmed our third hypothesis that the association between each of determinant factors and intention to use social media is mediated by Hofstede's dimensions.

The results of the correlations analyses indicate that all determinant factors correlated with intention to use the social media except for effort expectancy. The inability of effort expectancy to predict intention to use is quite interesting. The interpretation could be that European students have outstanding experience with technology that the ease with which they can manipulate them is no longer a motivation.

The results of the regression analyses indicate that Hofstede's dimensions mediate the relationship between determinant factors and intention to use the social media for educational goals. The results support and extend prior research that demonstrated the importance of cultural framework for understanding the relationship between perceived

technological usefulness and adoption of Internet based learning resources (Collins, 1999). This research study is the first to investigate the effects of cultural dimensions on use of social media for educational purpose.

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Chapter Seven
Conclusion

7.0 Introduction

The conclusion attempts to give a resume of the outstanding findings and the corresponding implications on the study, and on the theory. We organized the section according to the order of research questions.

7.1 Summary and implication of the first research question

This study seems to suggest that the social media applications are becoming potential tools for educational purpose. The number of students that admitted they are making use of social media applications on day to day bases for educational goals in their institutions seems quite encouraging. Although relationship with instructors through the social media at moment seems minimal, communications about home work and instructor's guide are shared using some of the social media tools by the students.

The result of this analysis indicates that social media in the near future will play a leading role in the administration of knowledge. If the present tempo of use is maintained, scholars will make adequate use of the social media for educational goal, as it not only saves cost, but grant easy access and convenience to the learners.

7.2 Summary and implication of second research question

The study suggests that there are significant differences in the distribution of social media use across national institutions. The British students appear to be making use of the social media applications more than their Netherlands counterparts for educational goals. Although some similarities exist in the way social media applications are used within the two cultures, the sharp contrast is so pronounced.

There is need to involve more EU nations in future research work in order to have a clearer view of the role national culture plays in the use of social media. An elaborate study comparing EU nations with other parts of the world may give a better understanding of cultural differences as it relates to the use of the social media.

7.3 Summary and implication of the third research question

The study seems to imply that some mediating variables directly affect the relationship between the determinant factors and intention to use the social media. The outcome of this study indicates that cultural factor to a great extent affect the acceptance

as well as relationship between human and technology. Study by Marcus et al (2004) point that experience with technology, and technological development affect views as well as appreciation of technology. Societies lacking in technological experiences feels more reluctant in accepting a new or novel technology. Cultural values are equally played out with the use of technology. Societies where a great power gap exists among citizens, feel less at ease with new technology when compared with their counterparts in moderate or less power-distance state.

This study tested basic social media model aimed at explaining how and what contributes to intention to use social media applications for educational goals by students of higher education. For the fact that the hypotheses were not rejected, the basic social media model may be applied to explain intention to use technology especially when it involves cultural context. Researchers are implored to use the model to further test its efficacy.

7.4 Practical Implications

A number of practical implications can be made on the basis of the findings of the thesis and the literature reviewed.

The present study established that significant numbers of students in European higher institutions are at present using social media applications for educational purposes and are having positive learning outcomes with the applications. The most fundamental implication is that researchers, policy makers, and organizations should be re-oriented to pay greater attention to the potentials of social media applications in learning.

For researchers, that means probing more deeply into motivations and experiences students are having while using the social media applications for educational activities is necessary. To the policy makers, effort should be made to inculcate social media course into school program so that the potentials as mentioned by (Klamma, 2007; Bryant, 2006) in the literature could be harnessed. Such program will not only help to make students full explorative learners but a co-creator of knowledge.

The affirmation across institutions that the use of social media applications in educational activities is having positive impact on knowledge and skill acquisition, as well as development of critical thinking portends good omen for organization's human resource development. From a professional point of view, the skills and knowledge the students will garner from using web 2.0 applications in education will prepare and support them to strengthen their network portfolio and to preserve and apply that after graduation. Students' present social media existence in higher education is component of their future professional work place.

7.5 Implication on Theories

The robustness of UTAUT theory in predicting user acceptance of information technology has drawn a wide attention. Research studies in the past, Alawadhi and Morris (2008), Oshlyyansky, Carins and Thimbly (2007), and Yu Tao and Yang (2007) in separate studies validated UTAUT. This present study supports such validation, as the study found two of UTAUT constructs performance expectancy and social influence as having predictive influence on intention to use the social media in higher education.

Although the predictive impact of the UTAUT was visible, the relationship between the constructs and intention to use social media were mediated by cultural indexes. Research works in recent time have explored the predictive effect of Hofstede's cultural dimension (Merkin, 2006; Browning, 2003; and Marcus 2008). This present study explores the mediating role of culture on intention to use social media for educational goals. At a theoretical level, this study contributes to improve understanding of cross – cultural differences as well as similarities in terms of approaches to education.

Chapter Eight
Recommendations

8.0 Recommendation

This part advances recommendation for further studies.

Comprehensive study of other EU nations is recommended, as it is only through such research that we can get a global view of the benefits and opportunities available through web 2.0 applications in higher institutions of learning.

A more qualitative approach, such as observations, structured interview and case studies should be used in future research to get first hand information about other factors that may influence intention to use social media among students.

Research into the social media applications digital learners view as the most engaging and motivating application is deemed necessary, such knowledge will help policy makers to know the kind of social media application that will fit into educational program.

Research on how we can address the issue of e-safety associated with the use of the social media applications is germane. Such research effort will reduce worries among those afraid that adoption of social media for educational goals portend more ill consequences than good.

8.2 Recommendation to higher institutions, government and organizations

The EU government as the controller and provider of education should set machinery in motion to ensure full utilization of this opportunity, offered by web 2.0 applications in education.

Higher institutions of learning should model their curricular to accommodate social network course. Such effort will help students who cannot withstand crowd in the classroom situation to make positive contribution outside the classroom, and increase his/ her knowledge base.

The ELIG should critically review the benefits of social media applications in higher education, and research on how best it can be implemented for optimal results.

Organizations should work hand in hand with its HRD department, and fashion out the best way it can utilize social media in providing informal training and lifelong education to its workers in order to reduce over dependence on workshop. Such action

will provide long term benefits to the organization as education through the social media continues, and will fit the expectations of crop of future employees.

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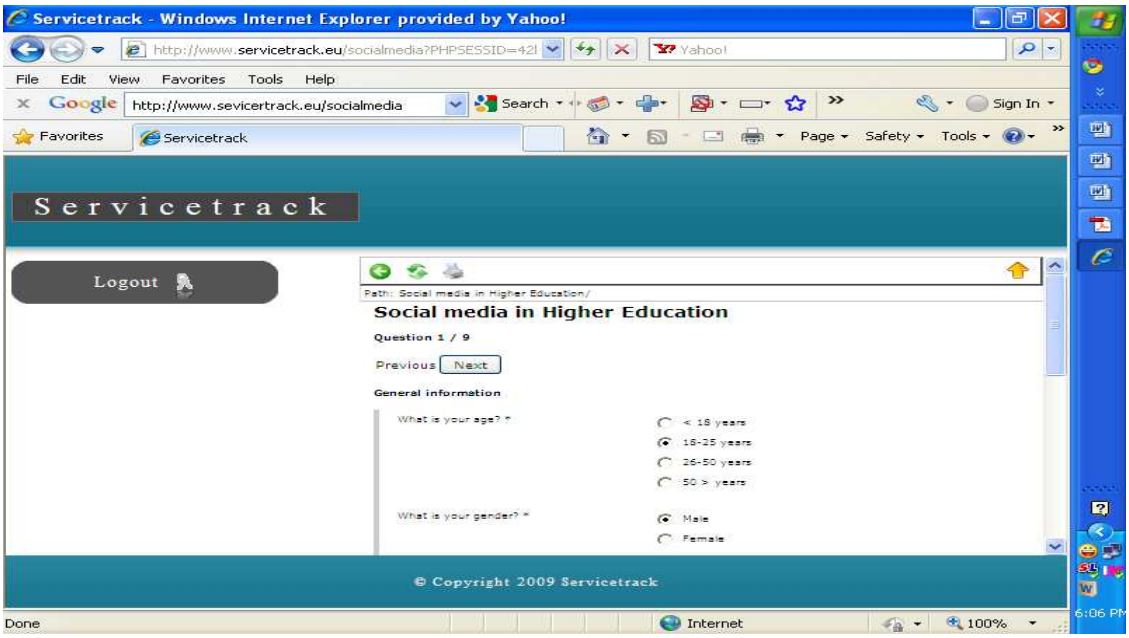
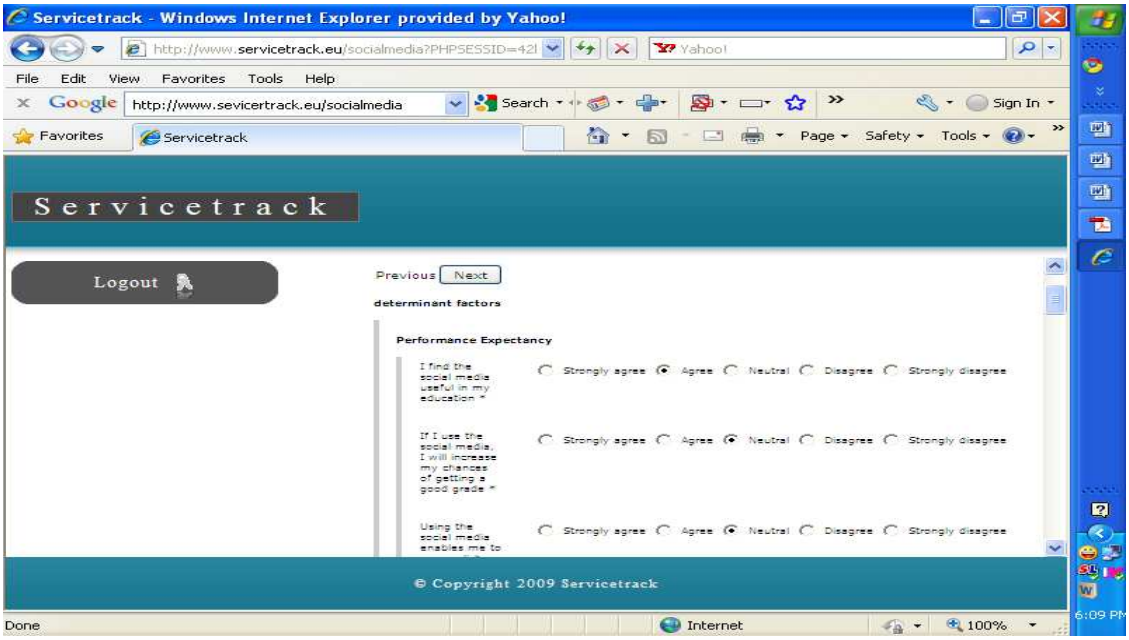
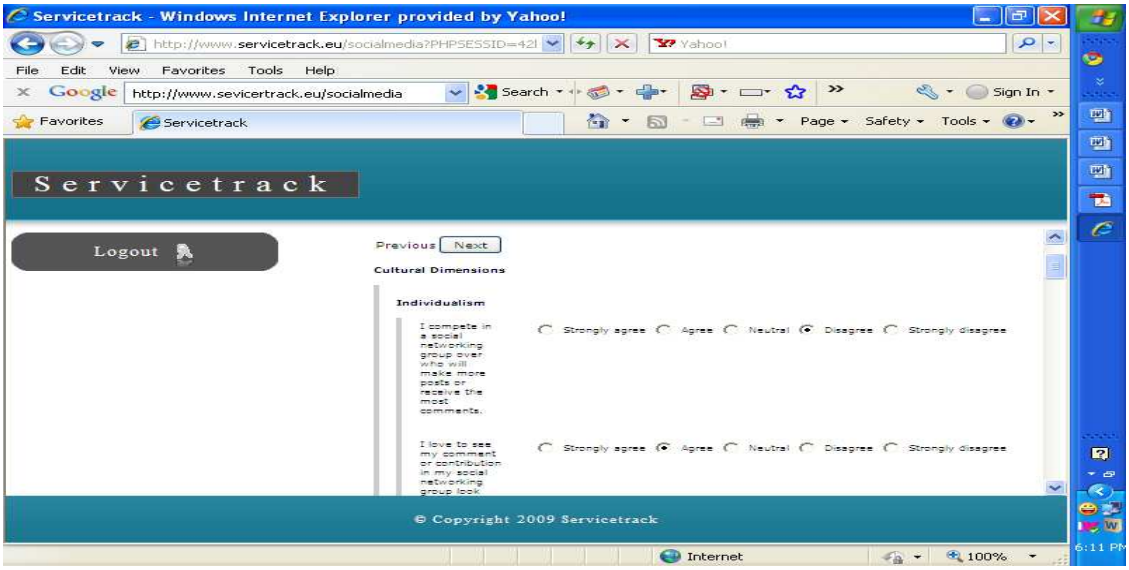
Appendix A

Online Questionnaire



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Favorites
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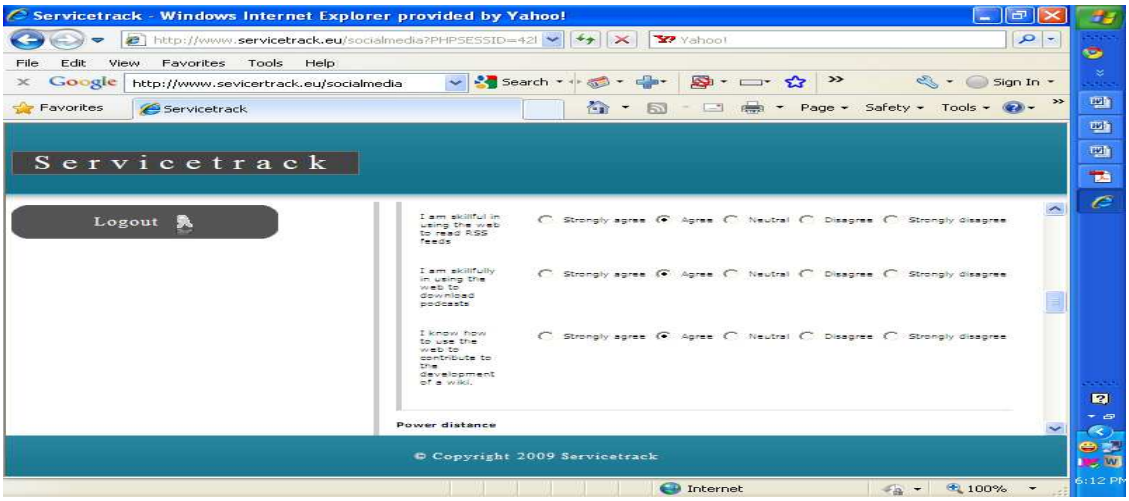
Page Safety Tools
Servicetrack
Logout
Previous
Next
Cultural Dimensions
Individualism
I compete in a social networking group over who will make more posts or receive the most comments.
Strongly agree Agree Neutral Disagree Strongly disagree
I love to see my comment or contribution in my social networking group look
Strongly agree Agree Neutral Disagree Strongly disagree
© Copyright 2009 Servicetrack
Internet
100%
6:11 PM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Page Safety Tools
Servicetrack
Logout
I am skillful in using the web to read RSS feeds
Strongly agree Agree Neutral Disagree Strongly disagree
I am skillfully in using the web to download podcasts
Strongly agree Agree Neutral Disagree Strongly disagree
I know how to use the web to contribute to the development of a wiki.
Strongly agree Agree Neutral Disagree Strongly disagree
Power distance
© Copyright 2009 Servicetrack
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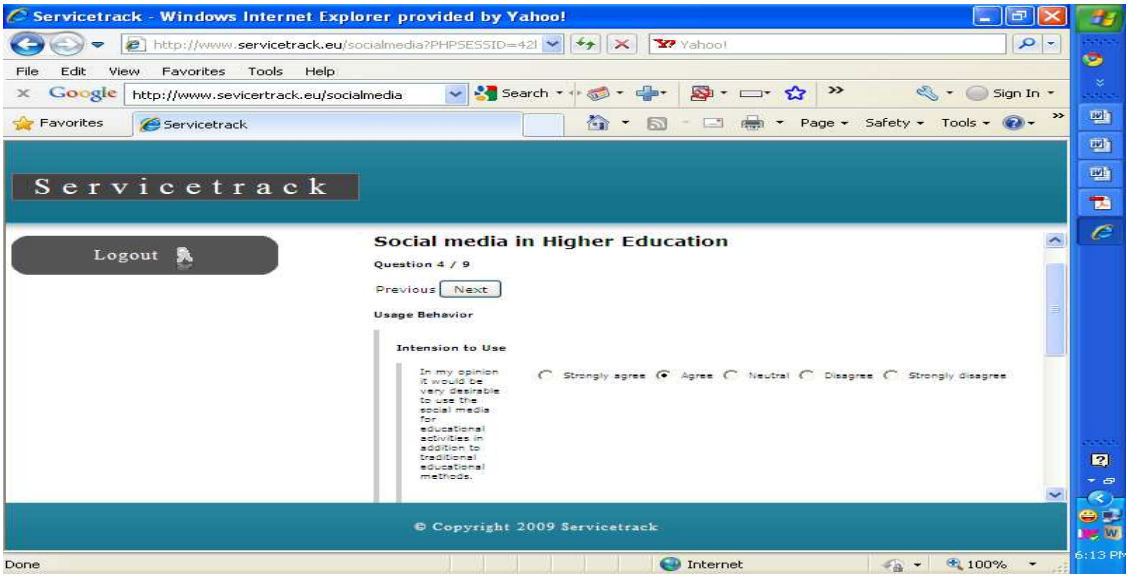
100%
6:12 PM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Page Safety Tools
Servicetrack
Logout
Social media in Higher Education
Question 4 / 9
Previous
Next
Usage Behavior
Intension to Use
In my opinion it would be very desirable to use the social media for educational activities in addition to traditional educational methods.
Strongly agree
Agree
Neutral
Disagree
Strongly disagree
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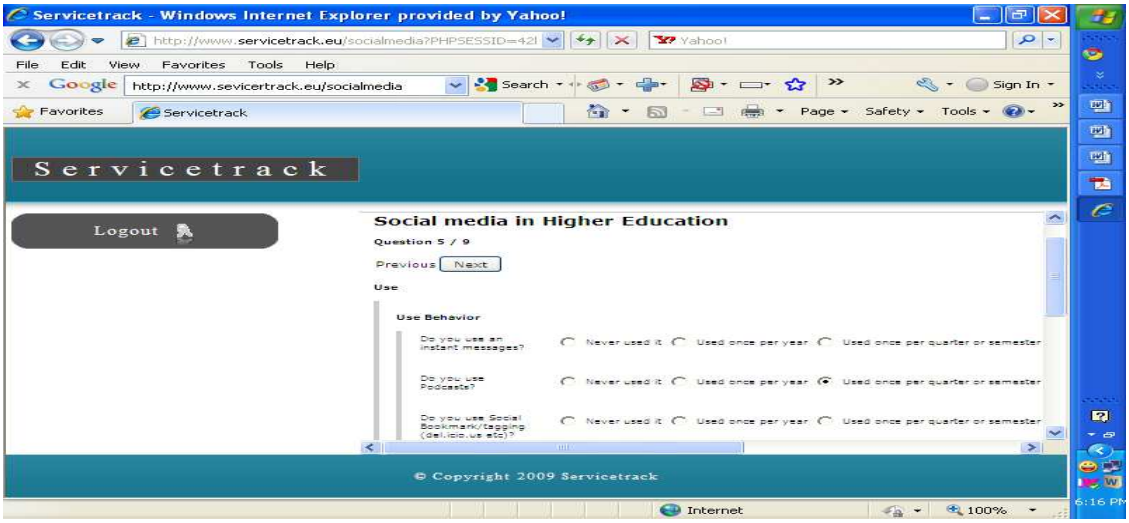
Done
Internet
100%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Favorites
Servicetrack
Page Safety Tools
Servicetrack
Logout
Social media in Higher Education
Question 5 / 9
Previous
Next
Use
Use Behavior
Do you use an instant messages?
Do you use Podcasts?
Do you use Social Bookmark/tagging (del.icio.us etc)?
Never used it
Used once per year
Used once per quarter or semester
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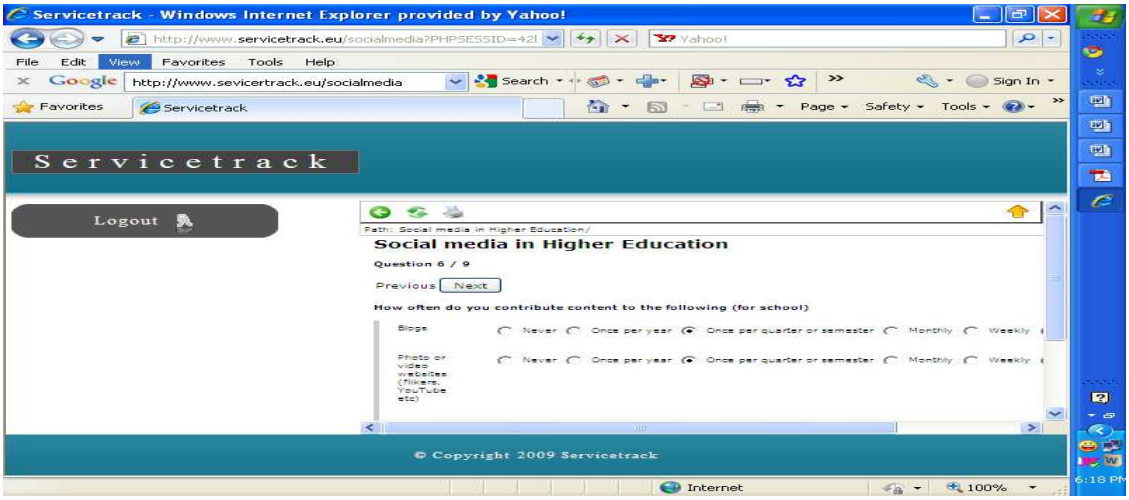
Internet
100%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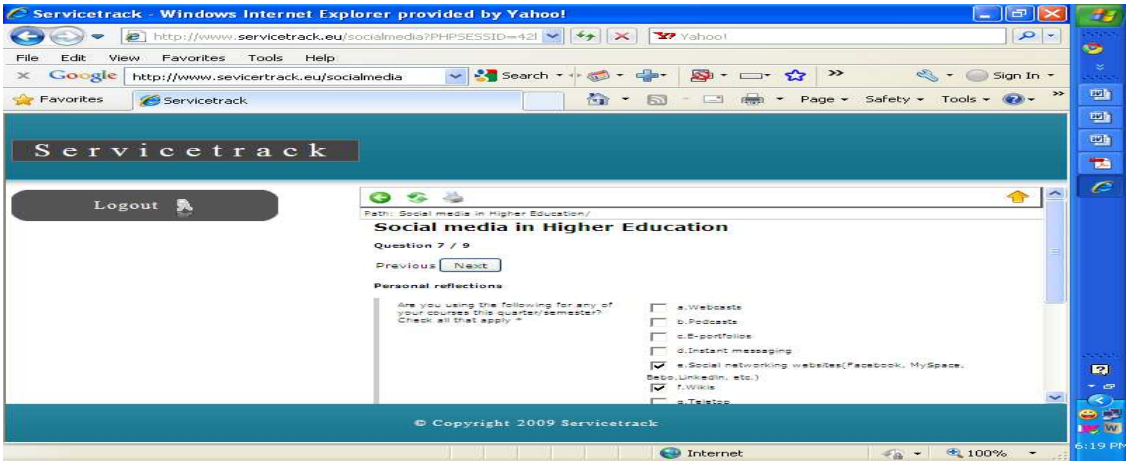
Logout
Path: Social media in Higher Education/
Social media in Higher Education
Question 6 / 9
Previous
Next
How often do you contribute content to the following (for school)
Blogs
Never
Once per year
Once per quarter or semester
Monthly
Weekly
Photo or video websites (flikers, YouTube etc)
© Copyright 2009 Servicetrack
Internet
100%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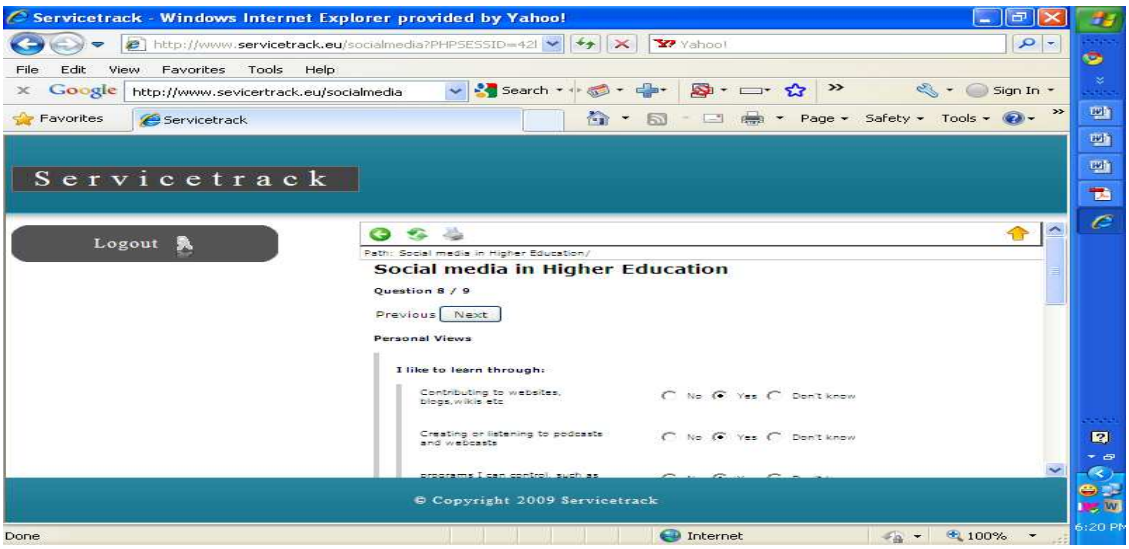
Favorites
Servicetrack
Page Safety Tools
Servicetrack
Logout
Path: Social media in Higher Education/
Social media in Higher Education
Question 7 / 9
Previous
Next
Personal reflections
Are you using the following for any of your courses this quarter/semester? Check all that apply *
a.Webcasts
b.Podcasts
c.E-portfolios
d.Instant messaging
e.Social networking websites(Facebook, MySpace, Bebo,LinkedIn, etc.)
f.Wikis
© Copyright 2009 Servicetrack
Internet
100%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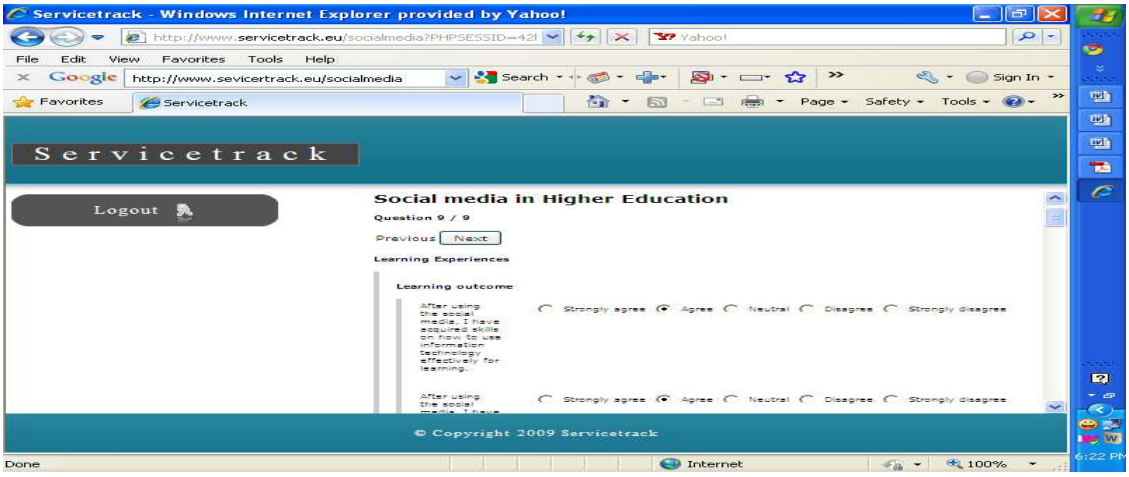
Favorites
Servicetrack
Page Safety Tools
Servicetrack
Logout
Path: Social media in Higher Education/
Social media in Higher Education
Question 8 / 9
Previous
Next
Personal Views
I like to learn through:
Contributing to websites, blogs,wikis etc
No
Yes
Don't know
Creating or listening to podcasts and webcasts
© Copyright 2009 Servicetrack
Done
Internet
100%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Servicetrack
Page Safety Tools
Servicetrack
Logout
Social media in Higher Education
Question 9 / 9
Previous
Next
Learning Experiences
Learning outcome
After using the social media, I have acquired skills on how to use information technology effectively for learning.
Strongly agree
Agree
Neutral
Disagree
Strongly disagree
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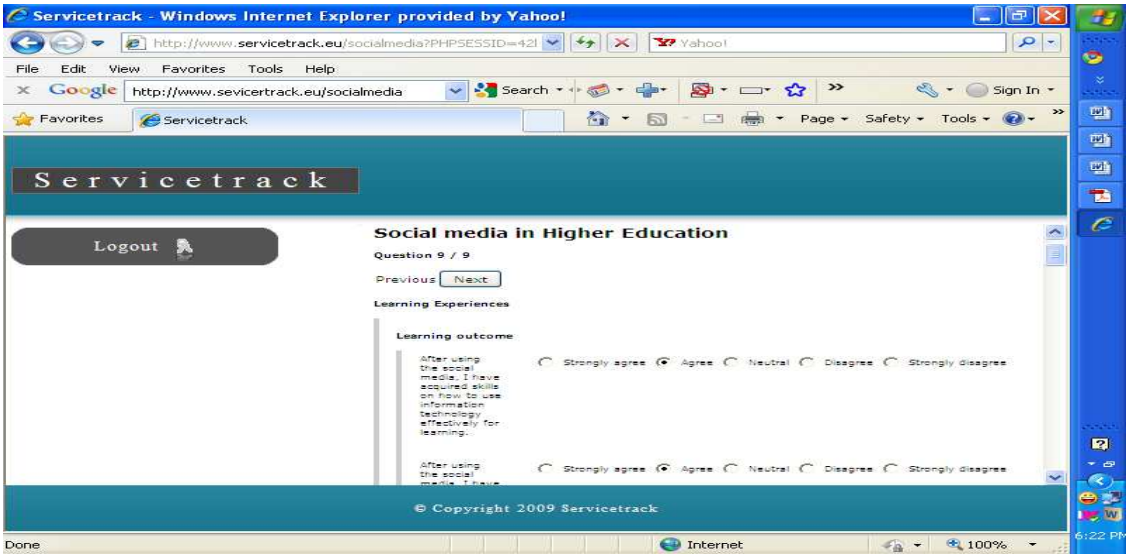
Done
Internet
100%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Logout
Social media in Higher Education
Question 9 / 9
Previous
Next
Learning Experiences
Learning outcome
After using the social media, I have acquired skills on how to use information technology effectively for learning.
Strongly agree
Agree
Neutral
Disagree
Strongly disagree
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Done
Internet
100%

Appendix B

Ethical Applications and related documents

Communication Studies
Faculty of Behavioral Sciences
University of Twente
P.O.Box 102A, NL 75000AE
Enschede
The Netherlands

The chairman
Ethics Committee
University of Teesside
Middlebrough
TS1 3BA
United Kingdom

Through
Professor Paul Van Schaik
Psychology Subject Group
School of Social Sciences and Law

Dear Sir/Madam,

Application for Permission to Administer Online Questionnaire in the University of Teesside.

I humbly wish to apply to the Ethics Committee for permission to administer online questionnaire among undergraduates and masters students of the School of Social Sciences and Law in your university.

I am Mr Eze Ezekiel Onyebuchi, a masters student at the University of Twente in the Netherlands. I am currently carrying out a study on the "Use of Social Media in Higher Education in European Countries." The University of Teesside's commitment and homogeneity (relatively less international students) makes it strategic for my investigation.

If the permission is granted, I wish to administer the online questionnaire to a sample size of 100 students that will be recruited from five departments in the School of Social Sciences. An estimate of 20 students will be selected across various levels of study in each of the department. The scheduled period for the study will be between 28th of April to 15th of May, 2009.

Please find attachment a sample of the questionnaire to be distributed.

Yours faithfully
Eze Ezekiel .O
A3

Participant Information Sheet 1

Project title: **Making sense of web 2.0 technology: Why do the Europeans use the social media in facilitating distance higher education?**

Thank you for participating. The purpose of this study is to explore how students use the social media in higher education in European countries. You will be asked to fill an online survey consisting of a series of questions regarding your social media use in education and the learning outcome with social media. With your assistance, we intend to have a better comprehension of the factors that influence the use of the social media in education in European countries. It is expected that the outcome of the research will aid in effective utilization of the social media in Europe. The procedure for completing the online survey will take estimated 15 minutes of your time.

I want to assure you that your personal details and the data obtained during the study will be stored separately and will be treated with utmost confidentiality.

Your identity will not be disclosed during the cause of this research. You are to sign up using your nickname and a password of your choice. This will guide against your identification.

You are allowed to withdraw from the exercise at any point in time, if you feel uncomfortable with the procedure.

Please do not hesitate to email the researcher if you have any question about the purpose or the procedure of the study. I once again thank you for making out time to complete the questionnaire.

Researcher: Eze Ezekiel
Communication Studies
University of Twente
P.O.Box 102A, NL 75000AE
Enschede
The Netherlands
e.o.eze@student.utwente.nl

Informed Consent

Consent form

University of Teesside
School of Social Sciences and Law

Project title: **Making sense of web 2.0 technology: Why do the Europeans use the social media in facilitating distance higher education?**

I confirm, that (please tick)

I have been informed of the purpose of the study as described in the participant information sheet with identification number …….
I have been given the opportunity to ask questions about the study.
I have the right to withdraw at any time - without personal consequences - up to the start of data analysis.
My personal details and the data obtained during the study will be stored separately and treated confidentially. Data will be stored in a locked filing cabinet in a university building and will only be accessed by the researchers. Data will be kept until the completion of the research.
I understand that my behaviour will be recorded and the recording will be stored securely on a compact disk in a locked filing cabinet until the completion of the research. I agree to participate in the study as outlined to me.

.....	.....	.....
Name of Participant	Date	Signature
.....	.....	.....
Name of Witness	Date	Signature

Researcher: Eze Ezekiel
Communication Studies
University of Twente
P.O.Box 102A, NL 75000AE

Enschede
The Netherlands
e.o.eze@student.utwente.nl

CONFIDENTIAL
REQUEST FOR ETHICAL APPROVAL

Please return form with Section A completed to:
The Secretary, Research Ethics Committee
School of *Social Sciences and Law*

Section A: To be completed by the appropriate Project Supervisor or Director of Studies.
Please read Section 4 of the University's "Policy, Procedures and Guidance Notes for Research Ethics".

1. School: Communication Studies

2. Project Title: **Making sense of web 2.0 technology: Why do the Europeans use the social media in facilitating distance higher education?**

3a): Name, position and address of Project Supervisor/Director of Studies:
Dr Sjoerd de Vries

3b): Names of other collaborators on project:

Professor Paul Van Schaik
Dr Stephen Farrier

4. Name(s) of Researcher(s)/Students working on this project:
Eze Ezekiel

Please tick type of Researcher:									
Taught Postgraduate		*PG Research Student*	√	*Staff - higher degree*		*Staff - other research*		*FinalYearUnder-grad. Student*	

5. Expected duration of project from: 15th February 2009 to: on-going

6. Aim(s) of Project:
The aim is to determine factors that influence the use of the social media in higher education in European countries. To achieve this, Basic Social media model is formulated using constructs from Unified Theory of Acceptance and Use of Technology (Venkatesh et al, 2003) and Hofstede (1980) cultural dimensions to determine factors that contribute in the use of the social media in higher education and the learning outcome. Based on the research result, recommendations will be offered on how best to utilize the social media for educational purpose.

7. Briefly describe the design of the project:
Using constructs from Unified Theory of Acceptance and Use of Technology (UTAUT) and components of Hofstede (1980) cultural dimensions, a Basic Social media model will be developed to explain the relationship between components. A reasonable number of hypotheses will be invented to be tested. Through online questionnaire, data will be collected to test the hypotheses. Following this, empirical claims will be made, leading to report of the project in form of a master thesis.

8. Will the participants	*University of Teesside*		*University of Teesside*	

be: (please tick as appropriate)	*Students?*	√	*Staff?*	

Other: (Please specify):
Participants must be students from School of Social Sciences and Law.

9. How many participants will be involved?
A total number of 500 participants will be involved in the entire study. It is expected that responses from approximately 100 participants will be collected from each of the selected universities.

10. State how participants will be selected:
The Participants will be recruited with the help of collaborators in each of the university.

11. Has statistical/methodological advice been sought on the size and design of the project?
YES, from Dr Sjoerd Vries

12. What procedure(s) will be carried out on the participants*? (Explain in terms appropriate to a layperson)*
Both the determinant factors and cultural factors that influence intention to use social media in education will be surveyed using online questionnaire. The participants will be provided with a web link to the measurement instrument. They are required to log in with any account name and a password to be created by them in order to access and fill the questionnaire.

13a): What potential risks to the interests of participants do you foresee?
There are no foreseeable risks to the participants. Participants will be informed about the purpose, nature and the course of the session in advance using an information sheet. Written consent will be obtained before the questionnaire will be administered. Participants will have the right to withdraw at any time without personal consequences. Personal details and obtained data will be treated confidentially.

13b): What potential risks to the Researchers do you foresee?
The researcher does not foresee anything more than minimal risks.

14 a): Will informed consent be obtained from all participants? YES
(If written, attach a copy of the consent form and information sheet) Please find Consent Form 1 and 2 attached.

15: If there is doubt as to a subject's ability to give consent, what steps will be taken to ensure that the subject is willing to participate *(e.g. assistance of independent colleague/ next of kin or other means)*
All participants will be above 18 years of age and fluent in English. If there is any doubt about the participants' ability to give consent they will be excluded from the research.

16: What information will be given to subject(s)?: *(Attach copies of letters or information sheets to be given to participants.)*
Information will be given through an information sheet (see Participant Information Sheet 1 and 2).

17: Where will consent be recorded?
Consent will be recorded on the consent form (see Consent Form 1 and 2).

18a): Will participants be informed of their right to withdraw? Yes

19: Does the project involve any other disciplines and/or Ethics Committees?
No

20: Will payments to participants be made? No

21a): Will the project receive financial support from outside the University Teesside? No

22: Will any restrictions be placed on the publication of results? No

23: Are there any other points you wish to make in justification of the proposed study?
No

***24*: I have read the University's guidelines on ethics related to research, and to the best of my knowledge and ability confirm that the ethical considerations overleaf have been assessed. I**

am aware of and understand University procedures on Research Ethics and Health & Safety. I understand that the ethical propriety of this project may be monitored by the School's Research Ethics Sub-Committee.

(Please complete the following as appropriate) *Please Tick*

▪ **I have appropriate experience of the general research area.**	√
▪ **I confirm that I have Research Ethics Training required by my School.**	√
▪ **I confirm that as Supervisor that I will monitor progress of the project.**	√
• **I confirm that the project complies with the Code of Practice of the following Professional Body: British Psychological Society**	√

***25**:*

Signature of Staff Researcher: _____ *Date:* _____

***OR**: Signature of*

Project Advisor *Date:* 23/4/2009

SECTIONS B/C: SCHOOL APPROVAL or REFERRAL and UNIVERSITY RESEARCH ETHICS COMMITTEE APPROVAL/REJECTION

Ethical Consideration *The following points have been assessed:*

1. *The merit and feasibility of the proposal*
2. *Possible discomfort, distress or inconvenience to participants and/or Researchers*
3. *Procedures for respecting confidentiality and operating with data protection legislation.*
4. *The implications of monetary or other inducements to University of Teesside, its staff, student or researchers, to participants or anyone else involved.*
5. *Potential conflicts of interest arising between the researcher's employment and the research project, or other collaborative research.*
6. *All safety risks have been assessed in accordance with the University's Risk Assessment Procedure and measures taken where appropriate to make them as low as reasonably practicable.*
7. *If the research involves human subjects, the following points have also been assessed:*

Procedures for:

- *providing explanation to participants including the preparation of an appropriate information sheet.*
- *obtaining informed consent from participants or where necessary from their parents or guardians, including the preparation of a written consent form.*

8. If the work may involve participants from vulnerable groups, the nature of recruitment and participation of these people.

SECTION B: SCHOOL APPROVAL or REFERRAL
To be completed by Chair of the School Research Ethics Committee

EITHER:

a) Following consideration by the School Research Ethics Committee, I now authorise the above project.

Signature of Chair of School Research Ethics Committee: _____ *Date:* _____

OR:

b) The School Research Ethics Committee is unable to reach a conclusion, and the case is referred to the University Research Ethics Committee.

Signature of Chair of School Research Ethics Committee: _____ Date: _____

The Chair of the School Research Ethics Committee must send a copy of an APPROVED Request for Ethical Approval Form to: The Secretary, University Research Ethics Committee, Research & Development Office, University of Teesside. The original of the form should be kept in the School. The ORIGINAL of a REFERRED Request must be sent to the above address for action and the Director of the School notified.

SECTION C: APPROVAL / REJECTION by University Research Ethics Committee

EITHER:

a) On behalf of the University Research Ethics Committee, I now authorise the above project:

Signature of Chair of University Research Ethics Committee: _____ Date: _____

OR:

b) **The University Research Ethics Committee is UNABLE TO APPROVE the project for the following reasons:**

Signature of Chair of University Research Ethics Committee: _____ Date: _____

A4

Dear Dr Mark,

Please find below an email informing me of the approval of my application to administer questionnaire at the University of Teesside in United Kingdom, and a request by the institution's ethics committee that I obtain evidence of ethics approval of my project from the University of Twente.

Please I want to know how I can obtain UT ethics clearance as soon as possible.

Kind regards
Ezekiel

From: Van Schaik, Paul [mailto:P.Van-Schaik@tees.ac.uk]
Sent: Wed 13/05/2009 18:17
To: Eze, E.O. (Ezekiel, Student M-CS)
Subject: Ethics approval

Dear Eze,

The ethics committee is happy to approve your application, but you will first have send evidence of ethics approval your project will have received from the University of Twente.

This could be a scanned document as an attachment or an e-mail message from the university confirming that your project has received ethics clearance.

Please send our evidence to

Mandy.Spurrel@tees.ac.uk
with a copy to
A.Abbas@tees.ac.uk
.

Paul

Paul van Schaik,
Professor of Psychology,
National Teaching Fellow,
Psychology Subject Group,
School of Social Sciences and Law,
University of Teesside,
Middlesbrough,
TS1 3BA,
United Kingdom.

Faculty of Behavioural Sciences
Media, Communication & Organisation

The Chairman
Ethics Committee
The University of Teesside
United Kingdom

Your reference
Our reference MCO-UP-09.067/ak
Date 20th May 2009
Enclosure(s)
cc.

Telephone +31 (0)53-489 3952
Fax +31 (0)53-489 4259
e-mail s.a.devries@utwente.nl

Subject **Evidence of Thesis Approval**

Dear Sir,

I write to confirm that the University of Twente authority has approved of the topic "Making Sense of Web 2.0 technology: Why do the Europeans use the Social Media in Higher Education" under investigation by Mr Eze Ezekiel Onyebuchi.

His questionnaire for the study has being scrutinized, and is in accordance with the ethical standard of the University of Twente. We will be pleased if you can render all the necessary assistance to enable him complete his Master thesis.

Thanks in anticipation of your corporation.
Yours sincerely
Sjoerd de Vries

Ethical Approval

Dear Eze,

Good news: you now have ethical clearance to collect data.

You can now invite all students in the School of Social Sciences and Law (SSSL) by e-mail to take part in your research.

Please e-mail TBSHelpdesk@tees.ac.uk
.
In your e-mail;
1. Include your invitation to all students in SSSL
and
2. State that you have received permission from SSSL's Research Ethics Committee - requested by Paul van Schaik on behalf of you - to invite all students in SSSL to take part in your research by completing your questionnaire.

Best wishes,
Paul van Schaik,
Professor of Psychology,
National Teaching Fellow,
Psychology Subject Group,
School of Social Sciences and Law,
University of Teesside,
Middlesbrough,
TS1 3BA,
United Kingdom.

A5
Reliability output of the entire measurement constructs

RELIABILITY

```
  /VARIABLES=PERFEXP EEFEXP CONBF SOCINFL CONMID CDIND TECHEXP CDPOWD CDMAS
INTENUSE USEBHV LEARNEXP
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.837	.843	12

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT INTENUSE
  /METHOD=ENTER PERFEXP CDIND.


CORRELATIONS
  /VARIABLES=PERFEXP EEFEXP CONBF SOCINFL CONMID INTENUSE
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
```

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.892	.275		3.239	.001	.349	1.434
	Performance Expectancy	.593	.073	.470	8.167	.000	.450	.736

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.939	.176		11.039	.000	1.593	2.284
	Performance Expectancy	.387	.051	.454	7.549	.000	.286	.489
	Individualistic Cultural Index	.144	.041	.212	3.535	.000	.064	.224