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Investigation of the Social Demographic Factors Underpinning Consumers' Adoption of Information Technology: The Case of Online Banking

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Research-in-Progress

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Abstract

The majority of models and empirical analyses on technology adoption research focuses on organizational rather than consumer contexts and uses research instruments which demand significant resources. I use household data on technology adoption to test a model's predictions targeted at consumers. I present the case of online banking in Italy and discuss that several demographic and social characteristics could be proxies for a consumer model's constructs and present initial evidence on the predictive power of the proxies on technology use in the context of online banking. I discuss clear-cut implications for management and society and seek to extend and validate the presented case by other technologies and countries in the future.

Keywords: IS success, users' and consumers' adoption of IS, IS reshaping society, online banking, technology adoption model

Introduction

The developments of consumer information technologies have created a multibillion dollar industry that enables consumers to use a diverse set of technology devices, applications and services. The advancement in technology and the growth of affiliated industries has been accompanied by research targeted at understanding how individuals accept and adopt information technology.

However, the majority of models and empirical analyses on technology adoption research focuses on organizational rather than consumer contexts and uses research instruments which demand significant resources in order to be applied in practice because of their complexity (Davis 1989, Davis et al. 1989, Venkatesh et al. 2003, Neufeld et al 2007, Elie-Dit-Cosaque et al. 2011). I investigate a different contextual and methodological approach and seek to develop clear-cut implications. I use household data on technology adoption to test a model's predictions. A key advantage the household surveys is their samples' representativeness, which is why high external validity and robustness of the study can be assumed.

Thus, this research contributes to the understanding of technology adoption and shows avenues for using demographic characteristics to infer relationships. The empirical test of technology adoption models has been predominantly performed by using direct questioning in order to proxy latent constructs. Distorting factors of direct questioning may be self-serving bias, inattention or strategic motives (Bortz and Doering 2006). I address this shortcoming by using household data on observed behaviour in technology usage. In addition, the effort of direct questioning and administering surveys in order to receive answers to relevant questions may be too high for practice. A manager who needs to select employees to use new systems may not have the time or expertise to survey his/her employees with questionnaires in order to best match employees with technology. I seek to fill this gap in literature by providing more obvious proxies for technology adoption via demographic characteristics.

Since it best fits the primarily non-organizational context, I use Venkatesh et al. (2012)'s technology adoption model (unified theory of acceptance and use of new technology model, UTAUT2) which particularly focuses on consumers' adoption of IT. In order to identify IT-use related questions, I review twelve household surveys from the Luxembourg Wealth Study Database (LWS). For the availability and comparability of the data I present the case of online banking in Italy which is sought to be extended by other technologies and countries in the

future. I discuss that several demographic and social characteristics could be proxies for the UTAUT2 constructs and present initial evidence on the predictive power of the proxies on technology use in the context of online banking.

Consequently, managers assessing scenarios for new technology introductions may be given more clear-cut indicators to understand the drivers of technology acceptance. This may assist in proactively designing interventions (employee training or marketing) targeted at populations of users or consumers that may be less likely to adopt and use new systems. Thus, the results of this study are not only limited to online banking and consumer markets but are relevant for improving the understanding of organizational users' technology adoption.

This research-in-progress paper is structured as follows. First, I give a brief overview of technology adoption models and select UTAUT2 as a reference model. Then, I discuss potential demographic and social characteristics for approximating the latent constructs of UTAUT2 and present the UTAUT2 proxy model. Subsequently, I analyse first data from Italy. Finally, I conclude and show future research avenues.

Literature Overview

The technology acceptance model (TAM, Davis 1989, Davis et al. 1989) has been the most widely employed model of IT usage (Venkatesh et al. 2003) and has been derived from the theory of reasoned action (TRA) and theory of planned behavior (TPB, Fishbein and Ajzen 1975, Ajzen 1991). TAM measures perceived usefulness and perceived ease of use as predictors of a users' intent to use IT, and their actual usage on the job. This base model is targeted at organizational users and has received considerable empirical support. It has undergone a variety of adaptions and extensions.

The extensions can be classified into two types: new *constructs* (endogenous or exogenous predictors) and new *contexts*.

First, a variety of new *constructs* have been described for explaining technology adoption. The focus has been in testing endogenous constructs. For instance, Venkatesh et al. (2003) introduce and empirically test performance expectancy, effort expectancy, social influence and facilitating conditions as main predictors and gender, age, experience and voluntariness of use as moderating predictors for *users' intent* to use IT and for their *actual usage* on the job. Taylor and Todd (1995) show that the endogenous variable perceived behavioural control (Ajzen 1991) is a determinant of IT usage. Elie-Dit-Cosaque et al. (2011) focus on the

perceived behavioural control variable and describe internal forces (computer anxiety and personal innovativeness with IT), external forces (managerial support, quantitative overload, qualitative overload and managerial support) as well as several individual differences (age, gender, education, IT experience and work status) as determinants of perceived behavioural control. Neufeld et al (2007) showed the influence of the exogenous variable 'project champion charisma' on IT adoption.

Second, technology acceptance has been investigated in various organizational and non-organizational *contexts*. The TAM or extensions thereof have been put into new contexts, such as new user populations (e.g. physicians, Yi et al. 2006), new technologies (e.g. e-commerce perspective, Grandón et al. 2011; web-based decision support systems, Hung and Wu 2012; online games, Zhu et al. 2012) or new cultural settings (e.g. India, Gupta et al. 2008).

These construct and context extensions have been valuable in enhancing our understanding of IT adoption. However, there have been limited and inconclusive findings on the influences of individual differences in the adoption of information technology. One reason may be that in the TAM individual differences are subsumed along with situational constraints and managerial interventions into external variables and are not further discussed. Venkatesh et al. (2003) are the first to also draw their attention to individual differences as gender, age, experience and voluntariness by modelling them as moderating variables. Venkatesh et al. (2003) find influences of age, gender and experience on usage behaviour in organizational contexts of several industries (entertainment, telecommunication, banking and public administration). However, Gupta et al. 2008 do not find an influence of gender on the adoption of IT in the field of eGovernment. Additionally, often the study of differences among individuals in technology adoption such as age, gender or education is neglected by simply controlling for the differences (e.g. Neufeld et al. 2007, Grandón et al. 2011).

Another reason for the neglect of individual differences may be that Venkatesh et al. (2003) model individual differences as moderators and do not test potential main effects. Admittedly, modelling individual differences as influence factors on relationships between endogenous variables with behavioural intentions and system usage is a well-acknowledged and from a causal perspective a well-evidenced method. However, if one were able to take apparent individual differences as predictors for behavioural intention and system usage, managers controlling their employees within organizations or targeting consumer markets could be

given more straightforward guidelines. Managers assessing scenarios for new technology introductions could be given more obvious indicators of acceptance in order to proactively design interventions (employee training or marketing) targeted at populations of users or consumers that may be less likely to adopt and use new systems.

Consequently, I seek to incorporate individual differences as proxies into the study for technology adoption. As base model I use Venkatesh et al.'s (2012*) unified theory of acceptance and use of new technology model for consumers* (UTAUT2). This model best fits the primarily non-organizational context of household data. It is based on the unified theory of acceptance and use of new technology (UTAUT, Venkatesh et al. 2003).

UTAUT2 includes three new constructs as compared to the base model for organizational users (UTAUT): hedonic motivation, price value and habit. These constructs are discussed with respect to potential proxies in the subsequent section. Table 1 summarizes the research design. After having reviewed technology adoption models in this section and having chosen UTAUT2 as an appropriate model for empirical tests (Cf. Step 1 of Table 1), I move a step forward to classify potential proxies in the subsequent section (Cf. Step 2 of Table 1).

Table 1. Research Design					
Steps	Technology Adoption Model Review (1)	Classification of Proxies (2)	Household Survey Review for IT related Questions (3)	Analysis, Results, Interpretation (4)	Future Research Direction (5)
Inputs	TRA (Fishbein and Ajzen 1975) TAM (Davis et al. 1989) TPB (Ajzen 1991) UTAUT (Venkatesh et al. 2003) HIS (van der Heijden 2004) UTAUT2 (Venkatesh et al. 2012)	UTAUT2 (Venkatesh et al. 2012) Demographic and social characteristics	Austria 2004 Canada 1999 Cyprus 2002 Finland 94/98 Germany 2001/2006 Italy 2002/2004 Japan 2003 Luxemburg 2007 Norway 2002 Sweden 2002 UK 2000 US 1994/1997/ 2000/2003/2006	Italy 2002/ 2004	Post-Hoc Analyses Challenge UTAUT2 Proxies Model Cultural Comparison of Italy 2002/2004 and Austria 2004 Appeal to household surveys to incorporate other IT-related questions (The socio- economic panel Germany 'SOEP' caters for this idea) Collect qualitative data via interviews
Outcomes	UTAUT2 (Venkatesh et al. 2012)	UTAUT2 Proxies Model	Austria 2004 Italy 2002/2004	Preliminary Results for Italy 2002/ 2004	

UTAUT2 Proxies Model

I will briefly introduce the different *constructs* of UTAUT2 (Venkatesh et al. 2012) and discuss links to demographic information which could approximate the constructs. The demographic information discussed is generally available in household surveys. The limiting factors are IT-related questions, which can be related to the constructs of behavioural intention and usage behaviour. IT-related questions cannot be expected to be readily available in all household surveys. I will show this gap and identify the availability of online banking related questions in the subsequent section. In the following I will already discuss the proxies in the exemplary context of online banking.

Performance expectancy is defined as the extent to which using a technology will provide benefits to a consumer in performing activities. Once information systems (ISs) are implemented they may facilitate and often speed-up transactions (Laudon and Laudon 2013). In the context of online banking users who possess their own business activities are likely to be in need of more transactions, which is why they may expect higher performance results of the system overall.

Effort Expectancy refers to the degree of ease associated with consumers' usage of technology. Age has been known to influence attentional demands or the ease of learning new things (Anderson et al. 1998, Smyth and Shanks 2011). One reason is that the perceived effort of learning increases with age. Thus, in the underlying context age may have a general effect on online banking usage.

Social influence refers to consumers' perceptions that important related individuals think they should use a particular technology. Also children may exert such a peer-pressure. Individuals with or with more children may be more likely to adopt modern information technology.

Facilitating conditions is the extent to which consumers perceive the availability of resources and support to perform behaviour. For this setting and often for IT in general more support can be expected in urban areas. Branches of banks are closer from which technological support can be obtained or general courses may be available which teach IT usage.

In the underlying online banking setting *hedonic motivation*, referring to the pleasure derived from using a technology, is supposed to play a minor role as the goal of this system is oriented towards managing private financial circumstances. Nevertheless, up to a certain extent, individuals who engage in formal education can be expected to find pleasure in acquiring new skills and knowledge. Thus, they may be more likely to adopt new technology just for the sake of acquiring new skills and experiencing pleasure.[1]

Price Value refers to consumers' cognitive trade-off between perceived benefits and monetary costs of applications. ISs often benefit from economies of scale (Laudon and Laudon 2013). Once ISs are implemented the marginal cost per additional transaction is close to zero. Thus, individuals who expect more transactions may perceive a more favourable cost/benefit ratio. It seems likely that people engaging in own business activities do more bank transactions and thus, are more likely to adopt online banking. Another line of thought may be that individuals with higher earnings tend to not perceive as much disutility from costs as individuals with lower earnings leading to a more favourable cost/benefit ratio for higher incomes and to a

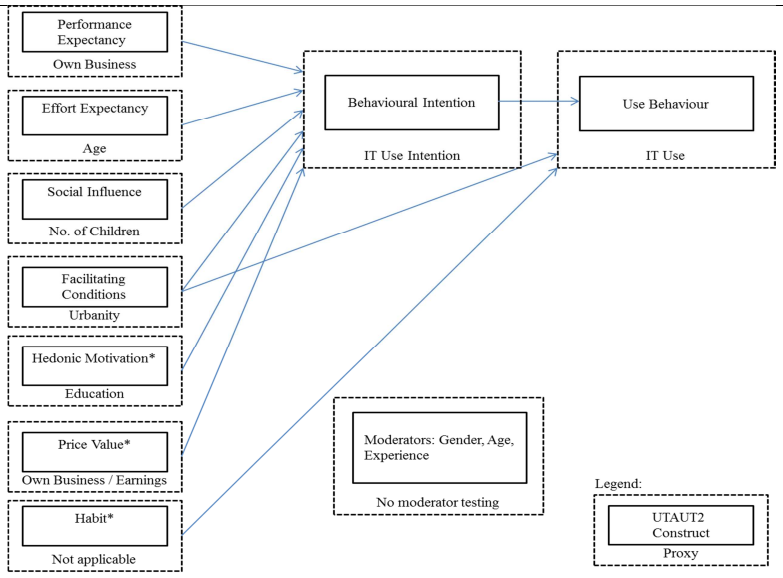
[1] Consumers' motivation may stem from different sources than employees' motivation. Consumers' motivation may be more pleasure-oriented whereas employees' motivation may be more productivity oriented. The potential type of information system can be classified to be rather of hedonic type, i.e. a hedonic information system (HID, e.g. online games) or utilitarian type (e.g. monitoring system, van der Heijden 2004).

higher probability for IT adoption. Price value is also one major difference in technology adoption consideration between consumers and organizational users. Consumers unlike employees are responsible for costs incurring in the adoption of technology. Cost considerations can influence consumers' product decisions and hence technology adoption (Coulter and Coulter 2007).[2]

Habit reflects the degree to which individuals tend to perform behaviour automatically and may reflect the results of prior *experience.* Experience refers the prior time of technology usage. The idea is that past technology use influences future technology use and adoption. These constructs are not applicable in this context as I only take the actual use of technology as an outcome measure.

Figure 1 shows the *constructs* and the causal relationships of UTAUT2 as well as the *proxies* used for this study. The linking of UTAUT2 constructs to the demographic information is not mutually exclusive. It is for example conceivable that rather urban individuals have a stronger peer-pressure to use certain systems because of city trends. This may link the urban/rural indicator to UTAUT2's social influence item. Another rational may be that children can influence the perception of the availability of support and may be seen as facilitators in the adoption of technology. Thus, this UTAUT2 proxies model can only be seen as a first attempt and does not have the right to be labelled comprehensive.

[2] Voluntariness is another key difference between organizational users and consumers. Organizational users have an organizational mandate whereas consumer behaviours can be considered to be voluntary (Venkatesh et al. 2012).



Notes: Asterisks highlight the constructs which are relatively more important in consumer contexts than in organizational contexts and thus appear in the UTAUT2 (Venkatesh et al. 2012), but not in the UTAUT (Venkatesh et al. 2003).

Figure 1. UTAUT2 Proxies Model: unified theory of acceptance and use of technology in a consumer context (Venkatesh et al. 2012, UTAUT2) and demographic proxies for the theory's constructs

Measures and Data Analysis Method

I retrieve the data from the Luxembourg Wealth Study Database (LWS) which provides harmonised household data from twelve countries. I review questions from the household surveys of these twelve countries (for a list of countries refer to Step 3 of Table 1). From the household surveys of the twelve countries reviewed, two surveys, the Italian and Austrian survey have administered questions on the use of IT. Both surveys ask questions regarding the use of online banking.

For the purposes of the pilot study I focus on the Italian data (years 2002/2004), which will be extended in future research with data from other countries. The Italian data originates from the Survey of Household Income and Wealth (SHIW) administered by the Bank of Italy. The data was collected in the subsequent years of the reference period, i.e. for 2002 between February and July 2003 and for 2004 between February and July 2005. It is a cross-sectional and partly longitudinal interview survey. By means of a structured questionnaire the interviewers asked questions and assessed answers. The focus of the survey is to provide information on household microeconomic behaviour within Italy. Information includes demographic characteristics, income, wealth and expenditure. In 2002 and 2004 approximately 8,000 households are sampled with a two-stage stratified sampling, with the

stratification of the municipalities by region and demographic size. The unit and item non-response rates are reported to be 50 % and 5 % respectively, tough it is higher for the online banking question. The interviewed individuals are household heads. A household head is defined by being primarily responsible for the household budget.

The dependent variable which is the use of online banking (ONBK) bases itself on answers to two questions in Italy 2002. The first asks “During 2002 did you or another member of your household use distance links (telephone or computer) with banks or financial intermediaries?”. The latter question is “Which ones?“ and the proposed answers used to construct the variable are “link via Internet” (MCOLDIS3) and “link via personal computer after installing software provided by the bank“ (MCOLDIS4). MCOLDIS3 and MCOLDIS4 allow ‘yes’ and ‘no’ as answers. If the individual ticks ‘yes’ to either of the answer possibilities then ONBK will be 1 = ‘yes’, even if the other answer possibility is responded to with ‘no’. If the individual does not answer ‘yes’ to either one but says ‘no’ to one or both of them, then ONBK will take the value 0 = ‘no’. If none of the variables is answered too, ONBK has a missing value.

In 2004, the prior question is almost the same: “During 2004 did you or another member of your household use distance links (telephone or computer) with banks or financial intermediaries?” and the follow-up question is again “Which ones?”, but the answers suggested are now “Internet banking” (MCOLDIS3) and “via personal computer after installing software provided by the bank” (MCOLDIS4). The construction of ONBK has the same pattern. Transforming the answer set into the binary ONBK variable supports harmonisation when comparing the results with other settings (e.g. the Austrian data).

The independent variables are described in Table 2 as well as Table 3 and the notes thereof. They represent the independent proxies as discussed in the previous section. I use simple linear analysis of variance in SPSS to establish significance of the relationships. The asterisk in Table 2 and Table 3 indicate the level of statistical significance.

Initial Findings

Table 2 shows demographic characteristics separated by the use of online banking for the Italian wave 2002. All proxies significantly predict the use of online banking. Age, educational achievement, own business activities and earnings significantly predict the use of online banking at the 0.001 level. Individuals who use online banking are younger on average (46.55 vs. 51.32), better educated (high school degree or better in use group vs. between

middle and high school in no use group), tend to possess own businesses (31 % in use group vs. 14 % in no use group) and earn more (19,849.26 USD in use group vs. 12,311.65 USD in no use group). At lower levels of significance are gender, urbanity and number of children. Men living in urban areas with several children were more likely to use online banking than women in rural areas with no children in Italy in 2002. Overall 79.7 % of the respondents use online banking in 2002. It is highly interesting to observe that the 2004 wave tells a different story. Only the educational achievement is significant at a 0.05 level. I explain this difference with the already higher adoption rate of online banking in 2004. Overall 86.65 % of the respondents already use online banking in 2004.

Table 2. Use of Online Banking by several demographic factors in Italy 2002

ONBK		AGEH	SEXH	EDUCH	URB	BUS OWN	EARNH	NOCH18
No	Mean	51.32***	-	3.59***	3.18**	0.14***	12,311***	0.45**
	N	73	M/F 54/19*	73	73	73	73	73
	Std. Deviation	12.06	-	0.97	1.37	0.35	13,705	0.69
	Minimum	26	-	2	1	0	0.00	0
	Maximum	78	-	5	6	1	70,000	2
	Std. Error of Mean	1.41	-	0.11	0.16	0.04	1,604	0.08
Yes	Mean	46.55***	-	4.10***	3.57**	0.31***	19,849***	0.70**
	N	286	M/F 237/49*	286	286	286	286	286
	Std. Deviation	11.18	-	0.74	1.31	0.46	19,687	0.86
	Minimum	21	-	2	1	0	0.00	0
	Maximum	82	-	6	6	1	190,000	3
	Std. Error of Mean	0.66	-	0.04	0.08	0.03	1164	0.05
Total	Mean	47.52	-	4.00	3.49	0.28	18,316	0.65
	N	359	359	359	359	359	359	359
	Std. Deviation	11.51	-	0.82	1.33	0.45	18,856	0.83
	Minimum	21	-	2	1	0	0.00	0
	Maximum	82	-	6	6	1	190,000	3
	Std. Error of Mean	0.61	-	0.04	0.07	0.02	995	0.04

Notes: ONBK = use of online banking (no/yes); AGEH = age of head of household; SEXH = sex of head of household; EDUCH = educational level of head (1 = none, 2 = elementary school; 3 = middle school; 4 = high school; 5 = bachelor's degree; 6 = post-graduate); URB = urban/rural indicator (1 = up to 5,000 inhabitants, 2 = 5,000 to 20,000 inhabitants, 3 = 20,000 to 50,000 inhabitants, 4 = 50,000 to 200,000 inhabitants, 5 = 200,000 to 500,000, 6 = more than 500,000); BUS = own business (0 = no own business /1 = own business); EARNH = earnings head in euro; NOCH18 = number of children under 18; Amounts are in 2002 USD using Consumer Price Indices and Purchase Power Parities (OECD 2005); * significant from other group at the 10 per cent level; ** significant from other group at the 5 per cent level; *** significant from other group at the 1 per cent level;

Table 3. Use of Online Banking by several demographic factors in Italy 2004								
ONBK		**AGEH**	**SEXH**	**EDUCH**	**URB**	**BU**	**EARNH**	**NOCH18**
No	Mean	48.18	-	3.95**	3.65	0.25	25,445.41	0.51
	N	55	M/F 47/9	55	55	55	55	55
	Std. Deviation	12.88	-	0.70	1.49	0.44	28,135.62	0.77
	Minimum	26	-	2	1	0	0.00	0
	Maximum	75	-	5	6	1	150,000.00	2
	Std. Error of Mean	1.74	-	0.10	0.20	0.06	3793.81	0.10
Yes	Mean	47.78	-	4.19**	3.70	0.31	25,196.63	0.57
	N	357	M/F 277/80	357	357	357	357	357
	Std. Deviation	10.98	-	0.81	1.48	0.46	58,206.67	0.84
	Minimum	21	-	1	1	0	0.00	0
	Maximum	78	-	6	6	1	1,000,000.00	5
	Std. Error of Mean	0.58	-	0.04	0.08	0.02	3,080.62	0.04
Total	Mean	47.83	-	4.16	3.69	0.31	25,229.84	0.57
	N	412	412	412	412	412	412	412
	Std. Deviation	11.23	-	0.80	1.48	0.46	55,123.93	0.83
	Minimum	21	-	1	1	0	0.00	0
	Maximum	78	-	6	6	1	1,000,000.00	5
	Std. Error of Mean	0.55	-	0.04	0.07	0.02	2715.76	0.04

Notes: ONBK = use of online banking (no/yes); AGEH = age of head of household; SEXH = sex of head of household; EDUCH = educational level of head (1 = none, 2 = elementary school; 3 = middle school; 4 = high school; 5 = bachelor's degree; 6 = post-graduate); URB = urban/rural indicator (1 = up to 5,000 inhabitants, 2 = 5,000 to 20,000 inhabitants, 3 = 20,000 to 50,000 inhabitants, 4 = 50,000 to 200,000 inhabitants, 5 = 200,000 to 500,000, 6 = more than 500,000); BUS = own business (0 = no own business /1 = own business); EARNH = earnings head in euro; NOCH18 = number of children under 18; Amounts are in 2002 USD using Consumer Price Indices and Purchase Power Parities (OECD 2005); * significant from other group at the 10 per cent level; ** significant from other group at the 5 per cent level; *** significant from other group at the 1 per cent level;

Discussion, Limitations and Future Research Agenda

I show that in certain stages in the adoption process of technology, demographic factors significantly influence the use of IT and suggest several demographic factors that can be used as proxies in the UTAUT2 model (Venkatesh et al. 2012). The typical online banking user in Italy 2002 tended to be male, younger than average, better-educated, tended to possess own business activities, had higher income, tended to live in rather urban areas and had more children than the typical individual who did not use online banking.

The differences in the data of 2002 and 2004 suggest that in order to study adoption of technology in a population, the adoption process should rather be ongoing. The online banking adoption rate in Italy increased from 2002 to 2004 and it can be assumed that the adoption rate is even higher today. This would make demographic distinction and statistical analysis on technology adoption difficult. Thus, the data at hand constitutes a rare opportunity to study technology adoption and to establish proxies for technology adoption using household data. There are several reasons why these days several demographic proxies may not be good predictors for the use of online banking anymore. The *price value* of online

banking has increased steadily. Banks nowadays charge costs for offline transactions making the online banking option more cost effective. *Effort expectancy* may have changed. The online banking systems may have gotten easier to use with more sophisticated and more usable systems. Thus, the 2002 Italian wave seems more adequate for investigating distinguishing proxies in technology adoption than the 2004 wave. Additionally, *facilitating conditions* may have been different in the years of 2002 and 2004 or nowadays. The availability of high-speed internet as facilitator may have been more limited in rural areas in 2002 than in 2004 or nowadays. Thus, the rural vs. urban indicator may have still played a stronger role in 2002 as compared to 2004. Hence, it is important to be aware of the economic and technological state of a country in order to investigate technology adoption. Overall, I believe that the established proxies also hold for other technology adoption processes than online banking. This is what I seek to test in the future by using other technology-related questions.

As discussed online banking is rather a utilitarian than a hedonic IS (*hedonic motivation*). It would be interesting to observe how education or business activity proxies predict the use of hedonic ISs. A potential question set to be introduced in demographic studies may be on social networks. However, there are several drawbacks using household surveys. First, only the household heads are interviewed. In Italy 2002 the heads are predominantly male (62.9 %). Second, there is often a relatively long time lag from the survey administering till the data availability. Third, researchers do not have direct and full control over the questions asked. Despite these drawbacks the use of household surveys has several key advantages. Such surveys generally provide representative data of the population. The collection, administering and handling of the data is conducted by professional bodies often having a long track record, high expertise and skilled staff conducting the interviews. Thus, I seek to appeal to SOEP (German household survey, Wagner et al. 2007) to incorporate questions concerning ISs and social networking. Appealing to incorporate questions to household surveys regarding the rise of the mobile technology and cloud computing in upcoming waves would be another avenue for research (Cf. Step 5 of Table 1).

Additionally, I seek to analyse cultural differences in the technology adoption between Italy and Austria on harmonised data. Thereby, I seek to refine statistical methods of analysis (including a multiple comparison problem analysis), try to identify potential causal chains and challenge as well as expand the UTAUT2 proxies model. This is important as in the current

business environment with continuing globalization, cultural differences play an increasingly important role also in the use of ISs (McCoy et al. 2004 and 2005, Gupta et al. 2008). I also seek to explore options to back-up the links established in this preliminary piece of research by qualitative data using interviews (Cf. Step 5 of Table 1).

In providing more obvious proxies managers assessing scenarios for new technology introductions may be given more clear-cut indicators to understand the drivers of technology acceptance. This may assist in proactively designing interventions (employee training or marketing) targeted at populations of users or consumers that may be less likely to adopt and use new systems. From a society perspective this research may help to understand how ISs are perceived and adopted by different parts of society. This can be used for policy interventions in supporting or consulting different parts of society in their technology use.

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