The Relevance of Age Categories in explaining Internet Banking Adoption Rates and Customers' Attitudes towards the Service

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Abstract

This paper focuses on customers' attitudes towards internet banking (IB), with particular reference to generational differences vis-à-vis such service. These factors are important for banks to project how demand is likely to develop over time. After modelling the IB adoption decision across a sample of countries, we conduct a questionnaire amongst bank customers who include users and non-users of IB and set up focus groups, each comprising participants from a specific age bracket. Whilst generational factors do not emerge as significant in the regression models, the questionnaires and focus groups suggest that generations differ in their attitudes towards IT-delivery systems and choice of preferred delivery channels. In this way banks have to constantly ensure that their online product mix is appropriate to cater for such distinct needs, especially in view of the increasing competition from non-bank entities in areas such as payments services.

1   Introduction

The consistent advances in technology influence customers' expectations regarding bank services. Consumer demands change frequently and customers are becoming less tolerant of sub-standard services, since they can easily switch to other banks' offerings. The introduction of technology-based delivery systems such as internet banking (IB), may be classified as both a contributor and a reaction to such trends (Mashal and Ahmed, 2015). IB offered considerable potential for change and cost-savings in financial services

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delivery.

The main aim of this paper is to investigate customers' attitudes towards IB and how these differ across generations. In addition we inquire whether such generational differences, are relevant to IB dissemination strategies. Distinguishing between different age groups is crucial for banks, in order to anticipate how IB demand and expectations are likely to change over time.

For the scope of this paper we started by analysing whether the age structure of populations is relevant in explaining cross-country differences in IB penetration. We then conducted a case study where we focused on three different age-groups: Generation Y (18-34years), Generation X (35-49years), and Baby boomers (50-68years). We chose Malta as our empirical setting; whilst this is not a major country in terms of the size of its banking markets, it still adds relevant evidence to existing literature since as outlined by Ladhari et al., (2011), customers in different countries may form different attitudes towards a particular offer. We obtained background information about IB trends in Malta through prior literature and by interviewing two bank representatives. Following this, we conducted a questionnaire and set up focus groups aimed at capturing the viewpoints of different IB users and non-users across generations.

The paper is structured as follows: Section 2 offers a review of prior literature and section 3 includes background information regarding IB trends in Malta. Section 4 outlines the methodology and section 5 presents the results obtained from the cross-country regressions. Section 6 offers the insights obtained through the case study which focuses on Maltese bank customers. Section 7 concludes.

2   Literature Review

Banks have exploited the potential of technology in expediting service delivery through channels such as IB which offer cost saving potential to both service providers and customers. Despite such advantages, a cross-section of consumers still do not use IB (Lee et al., 2005). Banks typically devote efforts towards raising awareness about IB, however some customers may still take long to adopt the service due to insufficient information about it (Mols et al., 1999; Saeidipour et al., 2003). Security concerns also proved a determining factor behind the postponement of IB adoption (Sathye, 1999; Hamlet and Strube, 2000; Howcroft et al., 2002; Ndubisi et al., 2004; Martins et al., 2014; Yang et al., 2015).

Prior literature has considered various determinants that impinge on the IB adoption decision. Income is often cited as one such factor (Howcroft et al., 2002; Patsiotis et al., 2012) given that IB users pay fees to access the service and to obtain internet subscriptions. In addition, income is usually commensurate with education (Trocchia and Janda, 2000) and the latter is related to IT-literacy. Various authors reported a positive relationship between IB usage and educational attainment (Padachi et al., 2008; Matilla et al., 2003; Patsiotis et al., 2012; Abu-Assi et al., 2014).

Employment is also related to IB usage. For instance, people with more prominent roles in an enterprise are more likely to use IB (Matilla et al., 2003; Ramayah and Koay, 2002; Mutengezanwa and Mauchi, 2013). Conversely, lower class individuals are less likely to adopt IB (Karjaluoto et al., 2002; Matilla et al., 2003; Sathye, 1999). In addition, individuals having a busy lifestyle are more likely to use IB (Lee and Lee, 2001).

Gender was also found to impact on IB usage. Researchers reported differences in

attitudes towards technology across genders in terms of the attributes which are devoted more importance to (Venkatesh and Morris, 2000; Shergill and Li, 2005; Lichtenstein and Williamson, 2006). Riquelme and Rios (2010) concluded that in the IB adoption decision, females allocate more importance to ease of use whilst men lay more importance on perceived usefulness. Other authors have proposed cultural reluctance as a factor behind the postponement of IB adoption (Ofori-Dwumfuo and Dankwah, 2013; Azad et al., 2013).

Age and generational differences also emerge as important determinants which impact on IB use. The relationship between age and technological change was investigated by various authors such as Harrison and Rainer (1992) who concluded that mature persons tend to be less adaptable to innovation. According to Oumlil and Williams (2000), mature clients are more reluctant to switch to new services. Morris and Venkatesh (2000) reported that age was inversely related to technology use.

Rogers (2003) outlined five categories of adopters of an innovation: innovators, early adopters, early majority, late majority and laggards. 'Innovators' are the most prone to try a new product and they tend to be younger people. The 'late majority' comprises those persons who adopt an innovation only after a critical mass of customers have tried it, and they are often in the older age bracket.

Given the above relationships between age and innovation-adoption rates, it is not surprising to find generational differences in attitudes towards IB. Generations of people born within the same time span are exposed to similar cultures in terms of their customs, social contexts, and familiarity with technology. Thus, every generation shares particular similarities in its cultural and psychological traits which shape its distinct attitudes and behaviour.

When distinguishing between generations, people born between 1946 to 1964 are described as baby boomers. Such people are now retired or shall retire soon. Generation X refers to the people who were born from 1965 to 1979; most of these people first encountered computers at school and a segment of them has learnt and adopted technology in order to use it in their daily lives (Ritchie, 1995). This category leads in online shopping and comprises the individuals who make most use of IB (Jones and Fox, 2009). People born during the period 1980 to 2000 are classified under Generation Y and are likely to have encountered laptop computers and internet at home. Alagheband (2006) found that Generation Y is usually more inclined to adopt IB.

Vijayan et al. (2005) showed that it is difficult to attract the older generation (baby boomers) to use online banking. Kolodinsky et al. (2004) found that Generation X is less likely to use IB than the younger generation in Malaysia, in contrast with Jones and Fox (2009) who found that Generation X in the U.S tends to use IB mostly.

Ramayah and Koay (2002) found that the overall age of a household is inversely related to IB usage. Abu-Assi et al. (2014) reported that middle-aged customers are more likely to use IB, as compared to younger and older ones.

Whilst literature which supports the idea of a relationship between IB use and the factors described above is prominent, some papers do not overall confirm these findings. For instance Li and Lai (2011) did not find any evidence that age affects customers' perceived characteristics of IB, such as ease of use and usefulness. Similarly, Izogo and Nnaemeka (2012) did not find evidence of any impacts of gender, income and other characteristics on IB adoption. In addition the relative impacts of factors such as age and gender on the IB adoption decision may vary in between countries, as reported by Yuen (2013) who conducted a questionnaire distributed to US and Malaysian

respondents.

3   Internet Banking Trends in Malta

Malta is a small island state, with a correspondingly small retail banking market.   Whilst more than twenty-five banks operate in the country, retail market activity is accounted for by seven banks.   According to Malta Financial Services Authority (MFSA) Annual Report (2015), the assets held by the Maltese banking sector stood at Euro 46.7 billion, and the core domestic banks (which offer the bulk of retail banking services) held around 43% of such assets as at the end of 2015.   The majority of the retail market activity is undertaken by Bank of Valletta and HSBC Bank (Malta).   The cautious banking policies of the core Maltese banks and their strong financial standing (Camilleri, 2005), explain why they were not materially affected by the global credit crunch which started in 2007 (Briguglio et al., 2009).   As per the World Economic Forum (2015), Malta ranked fifteenth out of 140 economies in terms of the soundness of the banking system.

As at 2015, the number of bank branches across the Maltese islands stood at 130, the number of ATMs stood at 211, and there were 870,000 payment cards in issue serving a population of over 430,000 people (MFSA Annual Report, 2015).   Imeson (2010, pg 12) reported that in case of one of the main banks, the proportion of transactions originating at branches (versus IB, ATMs and system-generated transactions) stood at around 15%.

There are several licensed credit institutions in Malta which offer IB services, however one may deduce that the bulk of IB activities is conducted through the core licensed banks: Bank of Valletta, HSBC Bank Malta, APS Bank, Lombard Bank and Banif Bank.   Other institutions which offer online access include: Agribank, FCM Bank, Fimbank, IIG Bank, Izola Bank, Mediterranean Bank and Sparkasse Bank Malta plc.

As per a survey conducted by the Central Bank of Malta (2014) IB transactions only account for 1.3% of the number of transactions conducted by Maltese residents, yet they account for 17% of the value of total transactions, ranking second after cash transactions. In addition, around 40% of respondents had access to IB systems in 2014.   In Malta, younger people (especially those aged between 25 and 34), employed persons, self-employed, people with higher levels of education, and those with higher incomes were more likely to use IB.

Research about IB services in Malta is scanty.   Camilleri et al. (2013) conducted a questionnaire amongst 70 Maltese bank customers, where it was confirmed that people who are busy during office hours (i.e. employed, self-employed and students) are more likely to use IB.   Most IB users answered that they have adequate information about the service whilst the majority of non-users think that IB is difficult to use.   Non-users also indicated that they felt adequately served through bank branches.   The main factors which inhibit non-users from adopting IB services were the perceived complexities and security concerns.   The authors also reported that IB users were influenced by acquaintances to adopt the service and 48% of them access IB every week.

In order to attain a more detailed account of IB services in Malta, we conducted two semi-structured interviews with two professionals from the leading banks.   The interviews included general questions about IB, and more specific ones about how generational differences may be relevant to IB dissemination.

The interviewees confirmed that the respective banks are increasingly offering additional services through the online setup and such improvements are marketed through various

media. Customer support is provided both online and through call centres. In addition, one of the banks employed third party agencies to offer training for specific age groups and specific people.

Banks continuously upgrade security features, and one safeguard which is being considered is the requirement of an electronic identity card in case of particular transactions such as loan and credit card applications. One respondent was emphatic about the fact that before implementing any changes, these must be researched and well-tested. Citing mobile banking as an example, the respondent said that the bank conducted several prior-trials both from a functional and from a regulatory perspective.

The importance of banks using multiple channels to deliver services and to communicate with customers was also discussed, especially in view of the fact that the popularity of IB services is likely to increase as customers get equipped with more sophisticated devices. Once customers avail themselves of online services and witness the inherent advantages, they tend to keep on using them. Despite this, both interviewees agreed that some particular services may be better delivered at branches and that customers prefer to access them face to face.   These comprise investment advice and the setting up of loans.

Bank interviewees reported that people aged between 36 and 55 account for the bulk of IB usage.   Customers aged between 18 and 35 rank next, however this generation tends to use online services infrequently for a few simple transactions like inquiring account balances and accessing bank statements. People aged over 55 are the least conversant with online banking.

Both banks agreed that one of the main problems when using IB is the lack of IT-literacy of customers which varies across age brackets. This is particularly evident in the over-fifties category who in addition tend to be sceptical about online security. Despite this, one interviewee added that even the most tech-savvy people may lack trust when conducting online transactions.

Banks also acknowledge the importance of updating tactical IB strategies such as awareness campaigns in line with market trends.   Similarly, promotional activities may present potential for collaboration with non-financial institutions; for instance offering discounts on products purchased and paid for online.

4   Methodology

In order to obtain an indication of the relative importance of age distinctions in the IB adoption decision, we started by analysing the cross-sectional variation of IB usage through a sample of thirty European countries.[2]   We estimated a series of regressions where the dependent variable was the difference between the population percentage having internet access and the population percentage using IB.   In this way we estimated the size of the segment of people who despite having internet access do not use IB.   This variable was regressed over four different indicators of the age-composition of the respective population in separate estimations.   In the regressions we also included

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[2]The sample comprised the following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey and the United Kingdom.

explanatory variables that represent the employment and the educational levels of the respective countries. All data were retrieved from the Eurostat database and refer to the year 2015.

Following this, we also conducted a case study on IB use in Malta through a questionnaire and focus groups amongst a sample of Maltese bank customers. The questionnaire was aimed at gauging customers' perceptions of IB services, and the focus groups were intended to garner more details about salient aspects which emerged from the questionnaire. In both instances, we delved into the differences across respective age groups.

Before finalising the questionnaire, we started with a pilot study in order to identify any possible inconsistencies in the draft version. Although the questionnaire was not materially modified, the responses from the pilot study were not included in the final sample.

A printed copy of the questionnaire was handed to 60 bank customers who were near two bank branches in Zejtun, Malta. Respondents were assisted to fill in the questionnaire on location when this was required. This sampling method meant that there was potential to capture responses from both IT-oriented people as well as those who are not familiar with the online setup, who are likely to comprise an important cross-section of non-users of IB. In addition, it resulted in responses from different generations of people. Whilst the empirical findings may not necessarily be generalised across all Maltese bank customers, there is no reason to expect the characteristics of this sample to differ materially from those of the target population.

The questionnaire was sub divided in three sections. The first section sought information about the respondents' age, gender, education and occupation. The second section was answered by IB users, and comprised questions about usage patterns and preferences regarding delivery channels. The third section gathered insights from non-users, such as the reasons behind the non-adoption decision and the likelihood of adopting IB in the future.

Focus groups were subsequently set up to delve deeper into the main insights obtained from the questionnaire. In focus group research, individuals represent a particular demographic or lifestyle, yet given that such research is usually limited to small numbers of participants, these may be imperfectly representative of the target population. Despite this, focus groups feature the advantage that ideas may crop up in a more spontaneous manner and unlike questionnaires, they do not rely on the prior-conceptions of researchers.

A focus group for each of the three respective age categories was held. Each group comprised four or five individuals who were unfamiliar with each other and the total number of participants in the focus groups amounted to thirteen. In selecting participants, a notice was circulated via social media and acquaintances to encourage interested persons to join in. The focus group topic was specified in advance and all participants contributed on a voluntary basis.

The focus group discussions took the form of conversations, where the moderator started by explaining that participants had a dual role as opinion contributors and as listeners. The moderator retained interventions to a minimum, mainly to prompt discussion or to clarify any issues. A note about the limitations inherent in focus groups is worthy. Participants may be prone to group behaviour; for instance particular individuals may 'dominate' a group or others may feel embarrassed to express an opinion when this differs from the general trend.

5   Cross-Sectional Variation of IB Adoption in European Countries

In this section we present the models where different variables were used to capture the relative importance of age categories in explaining the variation in IB adoption rates across the sampled countries.

In the five regression models shown in Table 1, the dependent variable was the difference between the population percentage having internet access and the population percentage that uses IB.   In each estimation, the regressors included the employment level and in some cases the educational attainment since prior literature suggests that these factors prove significant in explaining IB use.

Table 1: Modelling the IB Adoption Rates Across Countries

	Intercept	Age	Employment	Education	R-squared; Adjusted R-squared; F-Statistic
Model 1: Coefficient	154.43		-1.4568	-0.5017	
T-Ratio	(6.90)		(3.99)	(1.99)	
R-Squared					0.5754
Adjusted R-Squared					0.5440
F-Statistic: F(2,27)					18.30
Model 2: Coefficient	173.42	-0.9723	-1.5547	-0.4157	
T-Ratio	(5.99)	(1.03)	(4.12)	(1.57)	
R-Squared					0.5921
Adjusted R-Squared					0.5451
F-Statistic: F(3,26)					12.58
Model 3: Coefficient	160.39	-0.5928	-1.3703	-0.5388	
T-Ratio	(6.69)	(0.74)	(3.55)	(2.08)	
R-Squared					0.5842
Adjusted R-Squared					0.5362
F-Statistic: F(3,26)					12.18
Model 4: Coefficient	151.42	-8.6720	-1.6539		
T-Ratio	(6.69)	(1.98)	(5.04)		
R-Squared					0.5746
Adjusted R-Squared					0.5431
F-Statistic: F(2,27)					18.24
Model 5: Coefficient	140.21	8.8412	-1.6020		
T-Ratio	(5.81)	(2.02)	(4.79)		
R-Squared					0.5767
Adjusted R-Squared					0.5454
F-Statistic: F(2,27)					18.39

Note: The table shows five different models which regress the proportion of IB non-users across thirty countries, as a function of the respective employment levels, educational attainment and age groups. The dependent variable which denotes IB penetration was specified as the difference between the percentage of the population having internet access and the percentage of the population that uses IB. The employment variable is the employment rate for the age group 20-64 in the respective countries. The educational variable refers to the percentage of the population aged between 30 and 34 who have completed a tertiary degree. Model 1 was used as a 'control model' with no age variable, and it explains 58% of the cross-sectional variation of the IB non-adoption rate. In the subsequent models, different regressors were used to denote age. In the second model, age was modelled as the proportion of persons under fifteen. In the third model, the age regressor was the proportion of persons aged 65 and over. In the fourth model, the age regressor was a dummy variable which took the value of one when the young age dependency ratio for a country was higher than the average for the whole sample, and zero otherwise. In the fifth model, the age regressor was a dummy variable which took the value of one when the old age dependency ratio for a country was higher than the average for the whole sample, and zero otherwise. One would expect higher proportions of young aged persons and retired ones, to be positively related to the dependant variable. The age regressors in Models 2 and 3 are insignificant, in the unexpected direction and do not materially improve the explanatory power of the first model. The age regressor in Model 4 is significant at the 95% level of confidence but in the unexpected direction. The age regressor in Model 5 is significant at the 95% level of confidence and in the expected direction. All data were downloaded from the Eurostat database and refer to the year 2015.

The first model did not include any variable related to age-composition and it explained 58% of the cross-sectional variation of the IB adoption rate. In each of the four subsequent models, a different regressor was included to account for the age-structure of the population. In Model 2 and Model 3, these variables were the proportion of persons under 15 years of age and the proportion of persons aged over 64 respectively. Although one would expect that such variables would be positively related to the number of people who do not use IB despite having internet access, the coefficients were insignificant in the opposite direction. In addition the age-related variables did not materially improve the explanatory power of the first model.

Therefore we estimated two further models. In Model 4, the age-related variable was a dummy which took the value of one when the young age dependency ratio for the particular country was higher than the average of the sampled countries, and zero otherwise.[3] In Model 5, we included a dummy variable which took the value of one when the old age dependency ratio for the particular country was higher than the average of the sampled countries, and zero otherwise.[4] The dummy variables were significant at the 95% level of confidence, and the one relating to old age dependency was in the expected direction. The dummy variable related to the young age dependency ratio was

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[3] The young-age-dependency ratio refers to the number of people under 15 expressed as a percentage of the number of people aged between 15 and 64.

[4] The old-age-dependency ratio refers to the number of people over 65 expressed as a percentage of the number of people aged between 15 and 64.

negative, indicating that the higher the proportion of people aged under fifteen, the lower the proportion of IB non-users. Whilst the under-fifteens do not typically use IB, this bewildering result may be due to the possibility that a relatively high proportion of people aged under fifteen may also imply a higher proportion of people within the next age bracket (Generation Y) who as shown in prior studies, are more likely to use IB.

Given that the cross-country estimations do not clearly capture the expected importance of generational differences where IB adoption is concerned, we further investigate the issue by conducting a case study on Maltese bank customers.

6   Case Study: Questionnaire and Focus Groups among Maltese Bank Customers

Analysing the first section of the questionnaire, it was ascertained that there was a cross section of different respondent categories, as summarised in Table 2.

93% of the respondents indicated that they have internet access at home or at work, and 70% of the total sample use IB. The latter figure should be interpreted with caution, especially as compared to the 40% statistic reported by the Central Bank of Malta (2014) and the figure of 47% published by Eurostat for the Maltese population during the year 2015. The high IB user proportion in our sample could be explained by a larger predominance of individuals aged between 18 and 34, who overall are more likely to use IB. The absolute majority of non-user respondents fall within the 50-68 years age group.

9% of the IB users access the service on a daily basis, 61% access the service once or twice a week and 30% use it at approximately monthly intervals. As shown in Table 3, the most popular feature on IB websites is inquiring account balances, and this option was chosen by every user. Fund transfers and accessing bank statements rank thereafter. When comparing in relative terms, the online bill payments are used more frequently by respondents aged between 35 and 49. No respondent submitted online applications for loans or credit cards.

Table 2: Characteristics of Respondents

		IB-users	IB non-users	% of total respondents
Age:	18-34	24	4	47%
	35-49	13	4	28%
	50-68	6	9	25%
Gender:	Male	19	9	47%
	Female	24	8	53%
Education:	Primary	0	2	3%
	Secondary	11	13	40%
	Post-secondary	11	0	18%
	Tertiary	21	2	38%
Occupation:	Full-time employed	25	3	47%
	Part-time employed	6	1	12%
	Self-Employed	2	2	7%
	Unemployed	1	5	10%
	Student	9	2	18%
	Retired	0	4	7%

Note: The table summarises the characteristics of respondents, in terms of age, gender, education and occupation. The third and fourth columns show the total number of respondents falling in the particular category. The last column reports the percentage of the particular category as compared to the total number of respondents i.e. 60.

IB users were then asked to select the preferred delivery channel across a variety of services, with the option of choosing more than one method of delivery. As shown in Table 4, online banking is the preferred delivery channel for most services, however branch access is preferred when submitting applications for credit. Whilst the responses did not reveal any material generational differences in preferred delivery channels for checking balances, statements and submitting applications for credit, some differences emerged in case of other features. When transferring funds, IB users across all generations were more inclined to opt for online delivery; yet the 50-68 age category seemed equally inclined to use other delivery methods. Similarly, 50% of the older users still pay bills when visiting a branch, whereas the other generations are more inclined to pay bills online. Overall this suggests that the older generation is the one that avails itself least of the potential of IB. Indeed, based on the frequencies with which IB users selected the online banking channel as compared to other delivery methods, the probability of the older generation selecting the online channel was 47% as compared to a probability of 57% for the younger generation, and 58% for middle aged users.

Table 3: Features Accessed by Internet Banking Users

	18 - 34 years %	35 - 49 years %	50 - 68 years %	All respondents %
Viewing account balances	100%	100%	100%	100%
Fund transfers	75%	62%	67%	70%
Accessing bank statements	71%	77%	33%	67%
Paying bills	54%	62%	50%	56%
Mobile phone top-ups	25%	23%	33%	26%
Others (e.g. submitting queries)	4%	0%	0%	2%
Submitting loan applications	0%	0%	0%	0%
Submitting credit card applications	0%	0%	0%	0%

Note: The table shows different IB features ranked by overall frequency of use.   The percentages shown in the last column are weighted averages of the first three percentages.

As expected, IB users visit branches less frequently than non-users (Table 5). Generational differences emerged in terms of the frequency of branch visits as well. When considering IB users, 58% of the young generation and 54% of the middle-aged category indicated that they visit a branch on a yearly basis.   This contrasts with the older-generation IB users, where the vast majority (83%) stated that they do not visit bank branches any longer.   This may be attributable to the fact that older persons may be less likely to demand non-routine bank services (such as a mortgage or a significant investment) and therefore their regular banking transactions are adequately served through the IB platform and ATMs.

In the third part of the questionnaire, non-users were asked the reasons behind the non-adoption of IB.   As shown in Table 6, the bulk of the responses related to lack of information about the service and the preference to interact in person with a bank representative.   Generational differences prevailed in this respect as well, since 50% of the young-generation non-users stated that they do not perceive IB as being relevant to their routine needs and their decision not to adopt IB is not related to IT aversion.   This contrasts with 56% of the responses from the older generation non-users that indicated that they do not usually access internet due to unavailability or due to computer illiteracy. As for the middle-aged category, it is pertinent to note that no respondent indicated that IB is not needed.   This may be associated with the possibility that people in this age bracket are likely to lead busy lifestyles.

Table 4: Preferred Delivery Channel

Service Being Accessed	Branch Banking	Online Banking	Other (e.g. ATMs, call centres)
Viewing account balances	2%	100%	12%
Accessing bank statements	7%	91%	14%
Fund transfers	21%	74%	7%
Paying bills	21%	77%	12%
Mobile phone credit top-ups	0%	40%	33%
Submitting applications for loans	98%	0%	0%
Submitting credit card applications	88%	14%	0%

Note: The columns show the percentage of IB users who opt for the particular delivery channel when accessing different banking services. Given that respondents could select more than one delivery channel for each service, rows do not add up to 100%.

Table 5: Frequency of Branch Visits for IB Users and Non-users

	Users of IB	Non-Users of IB
Daily	0 %	0 %
Weekly	2 %	29 %
Monthly	14 %	65 %
Yearly	49 %	6 %
No branch visits	35 %	0 %

Note: The table shows the percentages of IB users and non-users that visit bank branches at a particular frequency.

The responses of non-users when asked about what would encourage them to adopt IB are summarised in Table 7. Respondents could cite more than one factor, and the majority expressed their preference for a simpler user-interface, although in practice banks are constrained to balance ease of access with the required security precautions. Collectively, it seems that educational information about the use of computer software and IB might encourage non-users to adopt the service. 75% of the younger-generation non-users stated that encouragement from acquaintances would entice them to adopt IB (as compared to 0% and 33% for the middle-aged and older generations). This may be attributed to a higher tendency for peer-influence at younger age bracket.

Table 6: Reasons why non-users do not adopt online banking

	18 - 34 years	35 - 49 years	50 - 68 years	All respondents
Lack of knowledge about IB use	0%	75%	56%	47%
Preference for personal interaction	25%	50%	44%	41%
No perceived need	50%	0%	33%	29%
Internet unavailability / illiteracy	0%	0%	56%	29%
Security concerns	25%	25%	11%	18%

Note: The table shows the reasons why non-users have not yet adopted IB.   Columns to not necessarily add up to 100% given that respondents could select more than one option.   The percentages shown in the last column are weighted averages of the first three percentages.

Non-users were also asked about the likelihood of adopting IB services over the next few months (Table 8).   As may be expected, generational differences emerged in this respect as well; older and middle-aged generations' responses skewed towards 'not very likely', whilst the younger generation's skewed towards 'somewhat likely'.

Following the questionnaire, three different focus groups were held to delve deeper into the main insights.   The first focus group consisted of five participants whose ages ranged from 18 to 34. The second and the third groups were made up of four participants each, and ages ranged from 35 to 49 and 50 to 68 respectively. The main goal was to observe the differences across the generations. Out of all the thirteen focus group participants, five were non-users of IB: three from the elder generation, and one in each of the other categories.

Initially, participants were asked to express their conceptions about online banking, with the main responses being "convenient service", "security issues", and "time efficiency" across all generations.

Table 7: Factors which would encourage non-users to adopt IB

	18 - 34 years	35 - 49 years	50 - 68 years	All respondents
Simpler IB navigation	50%	25%	56%	47%
Further information availability	0%	50%	44%	35%
Encouragement from family / friends	75%	0%	33%	35%
Availability of a trial service	25%	25%	33%	29%
Increased security	25%	25%	11%	18%
Reduced fees	25%	0%	11%	12%
Others	0%	0%	33%	18%

Note: The percentages in the middle columns refer to the proportion of non-users within the particular age bracket, who selected the option shown in the first column. Column totals do not add up to 100%, since respondents could select more than one option.   The percentages shown in the last column are weighted averages of the first three percentages.

Table 8: Likelihood of non-users adopting IB within the next few months

	18 - 34 years	35 - 49 years	50 - 68 years	All respondents
Unlikely / Very unlikely	0%	50%	56%	41%
Neither likely; Nor unlikely	50%	50%	44%	47%
Likely / Very likely	50%	0%	0%	12%

Note: The percentages in the middle columns refer to the proportion of non-users within the particular age bracket, who selected the option shown in the first column. The percentages shown in the last column are weighted averages of the first three percentages.

IB users of the younger generation focus group conducted simple transactions; two members aged 18-23 stated that they only use online banking to access basic services such as checking account balances and fund transfers, since they do not usually pay any bills. Overall, this focus group emerged as the most technological oriented, since the participants demonstrated willingness to learn new approaches to use IB features more pro-actively in the future.   This confirms the trends which emerged in the questionnaire.

In case of the middle aged generation focus group (35-49 years), IB users tried to persuade a non-user that IB services are safe enough to use, since she was sceptical about security features. When asked about the mostly-used IB services, the participants mentioned bill payments, funds transfers and checking account balances especially on wage due dates.

One participant in this group expressed scepticism about online bill-payments given that no fiscal receipt is issued, however other members explained that banks provide an online receipt which still serves as proof of payment. Another participant recounted that when he once committed a mistake when transferring funds, call centre employees assisted immediately and this experience reassured him about using IB.

In the focus group held with those aged between 50 and 68, only one participant used online banking while the other three did not. One of the non-users knew very little about banking procedures (online or otherwise) since his family took care of his banking requirements. The other two non-users were aware of the features of online services however they still preferred to visit branches or ATMs. The IB user in this group stated that although he learned how to use IB when assisted by younger family members, he did not access it frequently due to security concerns and lack of proficiency.   When he actually uses IB he requests help from a family member.

A further issue pointed out by a non-user in the 50-68 age category was that he avoids adopting online facilities due to the related bank charges.   This aspect might also be linked to generational differences, given that most fee-based charges which are levied by retail banks were only introduced during recent decades and therefore elder people might be more averse towards such fees.

When asked about the frequency of branch visits, IB users from each generation (except for the one in the elder generation) do not usually visit a branch and some stated that it had been more than two years since they did so.   One member aged between 18 and 34 stated that her last visit to a branch occurred about a year ago in connection with a car loan.   Despite this, two members from the middle-aged group (a user and a non-user) stated that they do not expect branch activity to become negligible in the future, due to the

higher efficacy of face-to-face interaction. This may be linked with the idea that middle-aged people may require more elaborate services such as investment advice. Still, the tendency of the younger generations to avoid branch visits, offers a potential for banks to make more active use of online interaction facilities, when this generation starts to procure more sophisticated services.

The younger generation focus group was more judicious of IB websites, probably given that they are familiar with a vast cross-section of online sites. These participants stated that banks are uploading an overwhelming amount of information which may be counter-productive since additional intricacies make it harder to retrieve what is actually required. Whilst they acknowledged the benefits of multiple services being accessible through IB, they noted that there should be more straightforward access to the basic features. The younger generation also suggested that banks should provide demonstrations to prospective IB users via websites and/or at branches. In this way, prospective users would be aware of how IB works prior to committing themselves.

At the end of each discussion, all five non-users in the respective focus groups were asked whether they think that they will adopt IB in the future. The younger generation non-user, stated that she will adopt the service as soon as possible; the middle-aged non-user stated that she was still averse to adopting IB due to security concerns; while elder generation non-users do not believe that IB fits with their everyday needs.

7   Conclusion

Numerous papers reported different attitudes towards IB on part of different generations, yet fewer studies have focused specifically on such issues. This research gap is even more evident in case of the Maltese banking market. This study contributes towards filling these lacunae.

We first estimated cross-country regressions to analyse the variation in IB adoption rates and found that in most models age-related variables were not in line with our expectations that larger categories of under-fifteens and over-64's may be associated with a higher proportion of IB non-users. We then focused on Maltese bank customers by conducting a quesionnaire and setting up focus groups. In addition we also interviewed two officials from different banks operating in Malta. This case study yielded various insights when distinguishing between the responses of three different age brackets: 18 to 34 (Generation Y), 35 to 49 (Generation X), and 50 to 68 (Baby Boomers).

With reference to the youngest participants (Generation Y), it emerged that this segment uses IB mainly for simple transactions such as procuring account statements or transferring funds. This insight was also confirmed by bank interviewees.

In case of those aged between 35 and 49 (Generation X), bank interviewees stated that this generation accounts for the bulk of internet-banking usage which spans across all services, in line with prior studies such as Jones and Fox (2009). In the questionnaire and the focus group, it emerged that this generation uses IB comparatively more to access services such as bill payments.

The other age segment considered in this paper was the older generation (Baby Boomers) which in our sample comprises the highest proportion of non-users. Bank interviewees stated that those aged over 55 are the least conversant with IB and they are more likely to be sceptic about security. The questionnaire and focus group responses suggest that non-users within this age group are the least likely to adopt IB in the near future. The

only IB subscriber in the focus group, was not actually confident in using it.   This is in line with Vijayan et al. (2005) who showed that it is relatively difficult to attract the older generation to use IB.

The contributions of this paper are twofold.   Firstly, we have noticed that generations do not only differ in terms of the IB services which they access, but also in terms of their attitude towards IT-delivery systems.   Younger people tend to be more IT-literate and thus expect to become increasingly served online rather than through branches.   Such preferences may well persist during adulthood when this generation is likely to demand more elaborate banking services.   In this way, banks have to be on the continuous lookout that their online product mix is appropriate to cater for these distinct needs.   This issue is likely to become even more dynamic through the continuous technological improvements, which may offer further potential for transferring branch services to the online platform.

The second major insight relates to the need for information dissemination about online banking services.   Most non-users stated specifically that they do not have enough knowledge about IB services, and some users expressed lack of confidence in accessing IB websites.   Generational differences are again relevant in this respect.   In case of the older generation, these mostly require information to overcome IT aversion and to access simple features.   As banks add more services on their websites, the latter become more intricate and the other generations may require demonstrations in connection with such updates.   The most effective information-dissemination method may also differ across generational segments as argued in prior literature (Saeidipour et al., 2003).   For instance in case of the elder customers who might not navigate confidently through online media, some degree of face-to-face interaction may be required.   Other generations may be more inclined towards online demonstrations, which may also be made accessible to non-users to serve as a confirmation that IB services are simple enough to access.

The generational differences towards IB add to the complexity of designing 'optimal' websites and the communication techniques which banks are to adopt.   In addition, one may expect the service demand mix to change over time, as the younger generation migrates to a "prime-saver" status.   Similarly, as the middle-aged generation gets older, it may imply lower IT aversion on part of the elder segment in the future, and perhaps higher expectations in terms of online delivery.   The youngest generations may be expected to remain the ones who use the latest technological gadgets, with which IB systems should be able to interact. This suggests that banks may have to devote increasing attention to enable users to customise their IB interface, to cater for such differences.

Generational factors may also prove important for bank marketing due to the respective lifestyle differences, in line with Abu-Assi et al. (2014).   For instance, if banks opt to team up with non-bank entities to offer discounts on items purchased via IB, this promotional stance would probably be formulated with particular age-groups in mind.

Addressing the above factors shall become even more important as banks find themselves increasingly competing with non-bank entities, such as Electronic Money Institutions offering payments services. Such concerns offer potential for further research on how banks can effectively augment their IB services and integrate them with other delivery channels to serve the needs of distinct customer groups.

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