# Intergenerational Attitudes Towards Digital Banking Applications

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## ABSTRACT

The digitization of banking transactions is now a reality. As the most economically active generations are Generation X and Y, it is interesting to explore customers' attitudes of those two generations towards the digital marketing applications launched by the banking sector and financial institutions. This study identifies the factors that affect customers' attitudes of Generation X and Y towards those applications, classifies the customers of both generations into groups according to their similar behaviour patterns, and profiles each group of customers according to their demographic characteristics and other factors. Principal component analysis was conducted to identify the main factors that affect customers' attitudes of Generation X and Y towards the use of digital services and applications in the banking sector. Cluster analysis was performed to classify them into groups with similar behaviour whilst discriminant analysis was conducted to check cluster predictability. Nonparametric tests were performed to profile each group of customers according to their demographic characteristics and other factors.

## KEYWORDS

Cluster Analysis, Customers, Digital Banking, Intergenerational Attitudes, Non Parametric Test, Principal Component Analysis, Quadratic Discriminant Analysis

## 1. INTRODUCTION

Online banking and mobile apps of banking sector allow users to, among other advantages, access their accounts from anywhere and at any time (Munoz Leiva et al., 2017). These applications consist of an advantage over traditional banks. Despite all of these, it is important to highlight that the number of customers that operate through online banking has not increased as much as it was expected. Aspects such as the lack of differentiation between banks, lack of trust in the system, impersonal treatment or lack of security have caused reluctance from many customers to use such tools (Muñoz-Leiva et al., 2010). On the other hand, the last 10 years technology has undergone a tremendous progress. The ways of communication have changed radically and everything is easier to be transferred or uploaded (Fenton, 2016). Social media and applications are widely used as they provide numerous services

which can make life simpler (Li et al., 2015). Traditional banking services which used to be costly have transformed to adopt this digital-era (Dery et al., 2017).

According to a study conducted by Price Waterhouse (2014) involving 157 managers for technology and systems for financial institutions in 14 major markets in America, Europe and the Asia-Pacific, the weight of digital channels in retail banking will grow significantly in the coming years. The number of mobile banking (or m-banking) users who make purchases through social networks and use online banking will significantly increase, 56% and 37% respectively. This situation will be detrimental to other traditional channels such as bank branches and telephone banking, whose users will fall by 25% and 13% respectively. However, they will not disappear and they will continue to have an important role focused on the most complex banking.

Lee et al. (2003) stated that m-banking apps is an innovation that could become one of m-commerce's value-added apps. Zhou et al. (2010) defined m-banking as the use of mobile devices such as cell phones and personal digital assistants (PDAs) to access banking networks via the wireless application protocol (WAP). Nowadays, banking industry is at a border of a massive digital transformation and automatization. Many banks tried to keep up one step ahead and launched various initiatives of different scales (Courbe, 2016). Banks are now feeling the full force of digital disruption, which made its presence known a few years ago (Martino and Schaffner, 2015). The implications of such a revolution were unknown and there was no clear direction about the changes required to efficiently weather the transition into the digital world. Nevertheless, many banks tried to keep one step ahead and launched various initiatives of differing scales (Brodsky and Oakes, 2017). Hew et al. (2015) suggested that apps which are easy to use would attract consumers to use them; furthermore, the significant and positive association between effort expectancy and ease of use had also been confirmed, and finally consumers' perception on the usefulness of apps would directly influenced by the user-friendliness of the apps.

Today's customers are more sophisticated and tech savvy in order to their specific needs, each customer needs a unique experience from banking (Venkateswari, 2018). They want the companies to understand their unstated needs as well as their likes (Härle et al., 2016). Thus, it should come as no surprise that these customers are expecting similar kind of response and service from banking institutions too. From researching new services, opening an account, checking balance, conducting transactions, loans, credits, wealth management, customer support, delivering experience has become a key to success in this competitive market place (Kamra, 2014). As a result of this, banks are becoming more digitally oriented in order to satisfy their customers' new preferences and demands (Sonono and Ortstad, 2017).

However, the consumers' attitudes towards digital marketing applications vary among generations. For purposes of this study, Generation X is defined as those born during the years 1965-76 and Generation Y is defined as those born during the years 1977-1988 (Chowdhury and Coulter, 2006; Lescohier, 2006). Members of Generation X and Generation Y came out of a different history and with a different set of coping skills and expectations but both lived through much change: parents" divorce, corporate downsizing, limited financial aid, and a weak job market. Due to these shared changes many academics treat Generation X and Generation Y homogenously as a single target market segment (Cocheo, 2008; Levine, 2008; Read, 2007; Sweeney, 2008). Read (2007), measuring a range of work experiences and attitudes (job satisfaction, organizational commitment, empowerment, stress, trust in management, and work-life balance), found no differences across Generation X, and Generation Y. On the other hand, many researchers feel that although Generation X and Generation Y are similar in their pragmatic outlook on life, there are differences. Generation Y has been characterized as less cynical, more optimistic, more idealistic, more inclined to value tradition than Generation X.

Generation X is technologically savvy and is credited with moving the Internet into the mainstream. Professionals of Generation X have a high preference for Web and e-mail business communication, getting quickly frustrated with financial services providers who cannot provide that

service. In contrast to Generation Y, Generation X is the best-educated generation in US history based on college and university enrolments (Mitchell et al., 2005), and education is a demographic often positively correlated with computer usage.

Generation Y (millennials) is tech savvy and is the first generation to use email, instant messaging, and cell phones since childhood (Tyler, 2007; Tyler, 2008). But, more than previous generations, Generation Y is more comfortable with technology (Auby 2008) and knows how to solve problems and shorten the learning curve using collaboration tools. These tools include the following: cell phones, Bluetooth, Windows CE handhelds, laptops, email, and text messaging, to name several (Bradley, 2007). Moreover, Generation Y is labelled a generation of multimedia, multitasking people. According to Barnikel (2005) Generation Y is the first generation in which Internet consumption is exceeding television consumption.

Over the last decade, the impacts of digital technologies on business have changed significantly, rendering many business models obsolete. The integration of digital technologies into business processes – has become increasingly imperative for contemporary organizations seeking to survive and attain competitive advantages in a digital economy (Bharadwaj, 2000). Digital transformation differs from every industry and company. The integration of digital technology into all areas of a business leads to fundamental changes in how the business operates and delivers value to its customers (Rieker, 2018). Traditional retail banking models with costly full-service branch infrastructure and limited integrated digital channels are transforming to adapt to the digital-era. This evolution has driven increased customer expectations around turnaround times, availability of customer service, a superior customer experience and ongoing competitive pricing (Cuesta et al., 2015). The development of the Internet and mobile technologies has influenced the transformation of many industrial branches, including particular economies (Yousafzai and Yani-de-Soriano, 2011). The implementation of e-banking projects highlights the importance of digital transformation for contemporary organizations in order to survive and achieve competitive advantage in a digital economy (Shah and Siddiqui, 2006).

As Mbama et al. (2018) argued, bank employees who frequently interact with customers are the most important link in service delivery, building trust and influencing customer behavior (Karatepe and Aga, 2016). Given that managers are responsible for implementing digital banking services, capturing their opinion through their reaction and interaction with customers is also crucial to understanding customer experience and financial performance impact. Julien and Tsoni (2013) investigated banking staff and customer perceptions focusing on identifying perception-based gaps and improving the service quality co-production.

Furthermore, there is an increasingly strong interest in understanding individuals' beliefs about technology and how these beliefs may influence the design requirements of technology-related products and services and, ultimately, determine the success or failure of such technologies.

Internet's continuing expansion and development affect companies and customers in acquiring more ways of communicating with one another (Ganguli and Roy, 2011). Financial institutions should understand the needs of customers and remain focused on enabling the control, convenience and speed that they demand. The vast majorities of customers across demographic segments are interested in digital banking and payment options and value the role these services play in their lives (Crowe et al., 2015).

As the most economic active generations are Generation X and Y, and those two generations behave different, this study is aiming to explore customers attitudes of those two generations towards the digital marketing applications launched by banking sector and financial institutions. This research will provide valuable information that banks could use to understand the needs and wants of customers of different generations and to improve their online banking services and develop new products and programs.

## 2. METHODOLOGY

### 2.1 Aims, Objectives, and Research Hypotheses

The current study aims to explore customers' attitudes towards digital banking applications in order provide insights to the understanding of customers' the needs and wants who belong to different generations and to improve their online banking services and develop new products and programs.

The objective of the study are:

1. To identify the factors that affect customers' attitudes of Generation X and Y towards those applications.
2. To classify the customers of both generations into groups according to their similar behaviour patterns.
3. To profile each group of customers according to their demographic characteristics and other factors.

In particular, this study examines the rejection of the following research null hypotheses:

**Ho1:** Banking customers of Generation X cannot be classified into different groups than those of Generation Y, according to the factors that affect their attitudes towards digital banking applications.
**Ho2:** Customers' demographic characteristics of both examined generations are not significant related to a particular attitude towards digital banking applications.
**Ho3:** Customers' opinion about digital marketing in banking sector of both examined generations are not significant related to a particular attitude towards digital banking applications.

### 2.2 Research Methodology

A primary survey was conducted to 169 banking customers of generations Y and X to gather the necessary information.

Customers were selected randomly, with the criterion that the interviewer was to solicit every sixth customer who came into the survey area (Fink, 2015). Information were collected through an interview survey with the use of a structured questionnaire as people are familiar with this kind of research and their educational level is suitable for the use of this kind of survey method (Oppenheim, 2000). In particular a structured questionnaire was developed by the researchers that is consisted of three parts. The first part contains questions that explore the attitudes of consumers towards the utilization of digital banking applications. In the second part there are questions regarding the opinion of customers towards the development of digital marketing in banking sector. Finally, the third part is consisted of questions relative to the demographic and other personal characteristics of the customer. The questions developed according to variables identified from the literature review and checked by experts. Moreover, a pilot survey to 30 customers took place in January of 2019. The main survey was conducted in spring 2019 in Greece.

Principal Component Analysis (PCA) was used to identify the variables that accounted for the maximum amount of variance within the data in terms of the smallest number of uncorrelated variables (components). In particular, the anti-image correlation matrix, as well as the Bartlett's test of sphericity and the Measure of Sampling Adequacy (MSA) were used, in order to check the appropriateness of the data for subsequent factor analysis. The variables with a high proportion of large absolute values of anti –image correlations and MSA less than 0.5 were removed before analysis. An orthogonal rotation (varimax method) was conducted and the standard criteria of eigenvalue = 1, scree test and percentage of variance were used in order to determine the factors in the first rotation (Hair et al., 1998). Different trial rotations followed, where factor interpretability was used to compare the reduced through PCA 17 variables related to banking customers attitudes towards digital banking applications to a smaller set of key factors. These PCA scores were then subjected to

cluster analysis to group customers with similar patterns of scores into similar clusters of attitudes towards digital banking applications.

In this study both hierarchical and non-hierarchical methods of cluster analysis were used (Hair Hair et al., 1998) in order to develop a typology of the customers attitudes.

Quadratic Discriminant Analysis (QDA) was also performed to assess how accurately the key identified factors could predict and discriminate cluster membership through factor analysis. Furthermore, the chi-square analysis was performed to develop the profile of each group of customers regarding their demographic characteristics (Aliaga and Gunderson, 2000). Non parametric Friedman one way test conducted to identify the opinion of the identified groups of customers of both examined generations.

## 3. RESULTS

### 3.1. Factors Affecting Banking Customers of Generations X and Y Towards the Utilisation of Digital Banking Applications

The variables and the two main key factors affecting banking customers of Generation X to use digital banking applications along with their eigenvalues and the percentage of variance results from PCA are portrayed in Tables 1 and 2.

Hence, PCA identified two main factors that affect banking customers of Generation X to use banking digital applications which are: (a) marketing issues and, (b) security issues.

Moreover, PCA indicated two main factors that influence customers of Generation Y to adopt digital banking applications that along with along with their eigenvalues and the percentage of variance results from PCA are portrayed in Tables 3 and 4.

Table 1. Variables affecting banking customers of Generation X to use digital banking applications

| Component | Eigenvalues | % of Variance | Cumulative Variance |
|---|---|---|---|
| 1 | 10.573 | 62.195 | 62.195 |
| 2 | 1.385 | 8.146 | 70.341 |
| 3 | 0.754 | 4.436 | 74.777 |
| 4 | 0.698 | 4.104 | 78.881 |
| 5 | 0.640 | 3.762 | 82.643 |
| 6 | 0.562 | 3.307 | 85.950 |
| 7 | 0.390 | 2.293 | 88.242 |
| 8 | 0.324 | 1.905 | 90.147 |
| 9 | 0.303 | 1.785 | 91.932 |
| 10 | 0.284 | 1.672 | 93.604 |
| 11 | 0.227 | 1.333 | 94.937 |
| 12 | 0.211 | 1.242 | 96.180 |
| 13 | 0.177 | 1.044 | 97.224 |
| 14 | 0.151 | 0.890 | 98.114 |
| 15 | 0.131 | 0.768 | 98.882 |
| 16 | 0.106 | 0.625 | 99.507 |
| 17 | 0.084 | 0.493 | 100.00 |

Table 2. The main factors affecting banking customers of Generation X to use digital banking applications

| Main Factors | Factor Loadings |
|---|---|
| **Marketing issues** | |
| Advertisement | 0.876 |
| Promotion activities | 0.840 |
| Pleasure | 0.827 |
| Convenience | 0.716 |
| Financial benefits | 0.700 |
| Complexity of applications | 0.684 |
| Save money | 0.640 |
| Introduction by friends and their experiences | 0.638 |
| Variety of products and services | 0.630 |
| Communication ability | 0.626 |
| **Security Issues** | |
| security | 0.861 |
| Trust | 0.838 |
| Low service cost | 0.794 |
| Easy accessibility | 0.768 |
| Controllable transactions | 0.745 |
| Save time | 0.670 |
| Service compatibility | 0.589 |

KMO MSA = 0.921 Bartlett test of Sphericity 1429.329 P <0.001

Table 3. Variables affecting banking customers of Generation Y to use digital banking applications

| Component | Eigenvalues | % of Variance | Cumulative Variance |
|---|---|---|---|
| 1 | 11.649 | 68.525 | 68.525 |
| 2 | 1.144 | 6.732 | 75.256 |
| 3 | 0.854 | 5.023 | 80.279 |
| 4 | 0.646 | 3.797 | 84.076 |
| 5 | 0.544 | 3.202 | 87.278 |
| 6 | 0.375 | 2.208 | 89.486 |
| 7 | 0.367 | 2.157 | 91.643 |
| 8 | 0.317 | 1.867 | 93.510 |
| 9 | 0.234 | 1.378 | 94.888 |
| 10 | 0.188 | 1.105 | 95.994 |
| 11 | 0.180 | 1.060 | 97.053 |
| 12 | 0.128 | 0.755 | 97.808 |
| 13 | 0.105 | 0.616 | 98.424 |
| 14 | 0.094 | 0.554 | 98.978 |
| 15 | 0.081 | 0.479 | 99.457 |
| 16 | 0.055 | 0.322 | 99.779 |
| 17 | 0.038 | 0.221 | 100.000 |

**Table 4. The main factors affecting banking customers of Generation Y to use digital banking applications**

| Main Factors | Factor Loadings |
|---|---|
| **Benefits and security issues** | |
| Trust | 0.892 |
| Save money | 0.832 |
| Communication ability | 0.826 |
| Security | 0.802 |
| Financial Benefits | 0.792 |
| Controllable transactions | 0.744 |
| Service compatibility | 0.722 |
| Pleasure | 0.681 |
| Low service cost | 0.665 |
| **Marketing issues** | |
| Advertisement | 0.830 |
| Save time | 0.781 |
| Variety of products and services | 0.779 |
| Easy access | 0.739 |
| Promotion activities | 0.715 |
| Convenience | 0.707 |
| Introduction by friends and their experiences | 0.675 |
| Communication ability | 0.583 |

KMO MSA = 0.902 Bartlett test of Sphericity 1525.466 P <0.001

As PCA indicated the two main factors that affect banking customers of Generation Y to use banking digital applications which are: (a) benefits and security issues and, (b) marketing issues.

In the next stage, hierarchical and non-hierarchical clustering methods were used to develop a typology of banking customers' attitudes towards digital banking applications (Hair et al., 1998). Cluster analysis was conducted on the 169 observations, separately for the 92 customers of Generation X and for the 77 cases of Generation Y, as there were no outliers. The analysis identified two groups of banking customers of Generation X that were named according to their attitudes towards those applications (Table 5). These are the (a) Marketing orientated and (b) Cautious.

In particular, the marketing orientated customers comprise the 76% of the sample. They are influenced in using digital banking applications by advertisement and promotion activities as well as by pleasure and convenience. Furthermore, the financial benefits, the complexity of application

**Table 5. Classification of customers of Generation X according their attitudes towards digital banking applications**

| Key Consumption Dimensions | Marketing Orientated | Cautious | P |
|---|---|---|---|
| Marketing Issues | 0.33674 | -1.07145 | 0.001 |
| Security Issues | -0.29806 | 0.94837 | 0.001 |
| Number of customers (n=92) | 70 | 22 | |

and the possible saving of money are some other factors that affect these customers in using digital marketing applications. Introduction by friends, customers own experiences, the variety of products and services as well as communication ability also have a significant impact on the utilisation of those applications by marketing orientated customers. Cautious customers pay attention on security issues including security, trust, low service cost, easy accessibility, controllable transactions, saving time and service compatibility.

On the other hand, the customers of Generation Y can be classified into two groups according to their attitudes towards digital banking applications: (a) conscious customers and (b) opportunists (Table 6).

Conscious customers comprise the 82% of Generation Y customers. Most of them use that digital banking applications because they pay attention on issues such as trust, saving money, communication ability, security and financial benefits. They are also influenced by issues as controllable transactions, service compatibility, pleasure and low service cost. Furthermore, marketing issues including advertisement, saving time, variety of products and services, easy access, promotion activities, convenience, introduction by friends, their experiences as well as communication ability have also significant impact on the decision of those customers in utilizing those applications. On the other hand, opportunists are consisting of the 18% of the millennials. They are not influenced by any particular factor in using banking marketing digital applications.

Discriminant analysis was conducted to evaluate the prediction of group membership by the predictors derived from the factor analysis. The summaries of the cross validation classification derived by the quadratic discriminant analysis for customers of Generation X and Y are portrayed in Table 7 and 8 respectively.

Thus, the research hypothesis *"Ho1: Banking customers of Generation X cannot be classified into different groups thank those of Generation Y, according to the factors that affect their attitudes towards digital banking applications"* can be rejected.

**Table 6. Classification of customers of Generation Y according their attitudes towards digital banking applications**

| Key Consumption Dimensions | Conscious | Opportunists | P |
|---|---|---|---|
| Benefits and Security Issues | 0.06505 | -0.29274 | 0.001 |
| Marketing Issues | 0.33245 | -1.49605 | 0.001 |
| Number of customers (n=77) | **63** | **14** | |

**Table 7. Summary of Classification with Cross – validation for Generation X customers**

| Actual Classification | Predicted Classification | |
|---|---|---|
| | **Marketing Orientated** | **Cautious** |
| Marketing Orientated | 68 | 0 |
| Cautious | 2 | 22 |
| Total N | **70** | **22** |
| N correct | 68 | 22 |
| Proportion | 97.1% | 98.0% |
| N =92 | **N correct=9**0 | **98%** |

**Table 8. Summary of classification with cross – validation for Generation Y customers**

| Actual Classification | Predicted Classification | |
|---|---|---|
| | Conscious | Opportunists |
| Conscious | 60 | 0 |
| Opportunists | 3 | 14 |
| Total N | **63** | **14** |
| N correct | 60 | 14 |
| Proportion | 95.2% | 100.0% |
| N =77 | **N correct=74** | **96.1** |

## 3.2. Profiling Each Group of Banking Customers of Generations X and Y Regarding Their Demographic Characteristics

A chi-square analysis performed to profile each group of banking customers of generation X and Y regarding their demographic characteristics. As Table 9 indicates both identified groups of banking customers of Generation X have similar profiles regarding their demographic characteristics. Most of them hold a bachelor degree, and are civil servant whilst no significant association found between those two groups and their annual family income and gender. Furthermore, the majority of the both groups of banking customers of generation Y hold a university degree whilst most of the Conscious customers are private employees and have annual income between 15,001 and 25,000 euro. Chi-square test did not indicate any significant association between occupation and income and the opportunists.

**Table 9. Profiling banking customers' according to their demographic characteristics**

| Banking customers' demographic characteristics | | Generation X | | | | Generation Y | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Marketing Orientated | | Cautious | | Conscious | | Opportunists | |
| Education | Primary | | 1.5% | | 0.0% | | 0.0% | | 0.0% |
| | Secondary | | 2.8% | | 4.5% | | 1.5% | | 0.0% |
| | High School | $x^2$=62.571 P<0.001 | 41.5% | $x^2$=9.636 P<0.05 | 27.2% | $x^2$=55.286 P<0.001 | 34.9% | $x^2$=8.769 P<0.001 | 21.4% |
| | University Degree | | **44.2%** | | **50%** | | **58.7%** | | **71.4%** |
| | Postgraduate degree | | 10% | | 18.3% | | 4.9% | | 7.2% |
| Occupation | Civil Servant | | **44.3%** | | **59%** | | 28.6% | | n.s |
| | Private employee | | 20% | | 21% | | **52.5%** | | n.s |
| | Retired | $x^2$=31.000 P<0.001 | 20% | $x^2$=14.725 P<0.05 | 10% | $x^2$=54.857 P<0.001 | 3.1% | n.s | n.s |
| | Unemployment | | 8.6% | | 10% | | 3.1% | | n.s |
| | Free licensed | | 7.1 | | 0.0% | | 0.0 | | n.s |
| | Student | | 0.0 | | 0.0 | | 12.7 | | n.s |
| Family annual income | <5,000 euro | | n.s | | n.s | | 4.8% | | n.s |
| | 5,000-15,000 euro | | n.s | | n.s | $x^2$=29.238 P<0.001 | 34.9% | | n.s |
| | 15,001-25,000 euro | n.s | n.s | n.s | n.s | | **60.3%** | n.s | n.s |
| | >26,000 euro | | n.s | | n.s | | 0.0% | | n.s |

Hence, the hypothesis *"Ho2: Customers' demographic characteristics of both examined generations are not significant related to a particular attitude towards digital banking applications"* can be rejected.

## 3.3 Profiling Each Group of Banking Customers of Generations X and Y Regarding Their Opinion About Digital Marketing in Banking Sector

A Friedman non parametric one way test performed to identify any possible association between the attitudes of customers of generation X and Y towards digital banking applications and their opinion about digital marketing in banking sector. As Figure 1 depicts both identified groups of customers of Generation X have similar opinions about digital marketing in banking sector. Both groups believe that digital marketing contributes to saving customers'/consumers' time and provides very fast service. Furthermore, most of the marketing orientated customers mainly believe that digital marketing provides immediate access to the services customer wants to use, convenience to the customer and elimination of the time outs whilst the cautious group mostly think that digital marketing became famous due to the advertisement, it contributes to the elimination of time outs and provides security to the transactions.

Besides both groups customers of Generation Y believe that digital marketing contributes to saving customers/consumers time (Figure 2). Most of the conscious customers think that digital marketing provides convenience to the customer, immediate access to the services customer wants to use, and contributes to the elimination of the time outs, provide fast service and became famous due to the advertisement. On the other hand, opportunists mainly have the opinion that digital marketing in banking sector provides friendly to the user services, convenience to the customer, contributes to save money and reduce cost for the customer as well as provides very fast service.

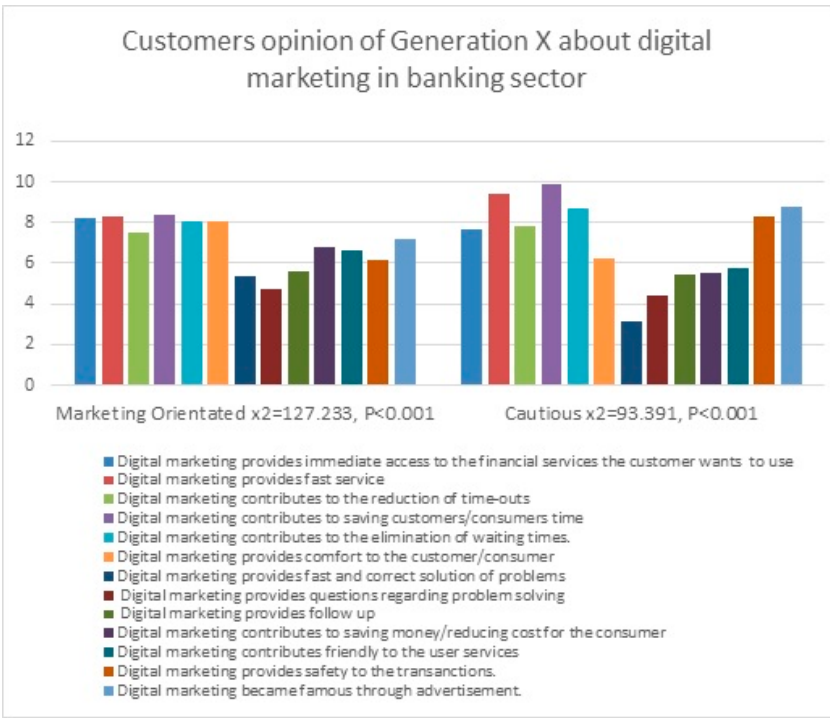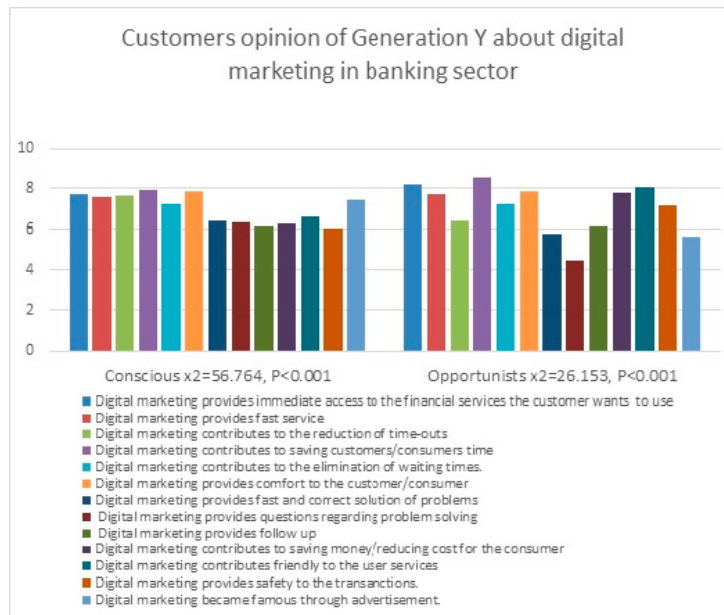Figure 1. Customers opinion of Generation X about digital marketing in banking sector

**Figure 2. Customers opinion of Generation Y about digital marketing in banking sector**



Thus, research hypothesis *"Ho3: Customers' opinion about digital marketing in banking sector of both examined generations are not significant related to a particular attitude towards digital banking applications"* can be rejected.

## 4. DISCUSSION AND CONCLUSION

Digital banking applications including online and mobile apps allow users to, among other advantages, access their accounts from anywhere and at any time and hence these application consist of an advantage over traditional banks. The digitization of banking transactions as a direct consequence of the overall digitization of the economy is now a reality that, although it has not yet completed the transformation of the economy, has in any case already brought about significant changes. Customers nowadays are more sophisticated and tech savvy. They want the companies to understand their unstated needs as well as their likes. Thus, these customers are expecting similar kind of response and service from banking institutions too.

As the today most economic active generations are Generation X and Y, and these two generations behave different, this study explored customers' attitudes of those two generations towards the digital marketing applications launched by banking sector and financial institutions. This research provides valuable information that banks could use to understand the needs and wants of customers of different generations and to improve their online banking services and develop new products and programs.

This study indicated that customers of both examined generations are influenced in their decision to use banking digital applications by two similar factors, marketing issues and security issues. On the other hand, customers of Generation X classified into two groups according their attitudes towards digital banking applications, the marketing orientated customers and the cautious customers, whilst the customers of Generation Y classified into another two groups the conscious customers and the opportunists. In particular the marketing orientated customers are influenced in using digital banking applications by advertisement and promotion activities as well as by pleasure and convenience. Financial benefits, complexity of application, possible saving of money are also some other factors

that affect these customers in using digital marketing applications. Introduction by friends, customers own experiences, the variety of products and services as well as communication ability also have a significant impact on the utilisation of those applications by marketing orientated customers. On the other hand, cautious customers pay attention on security issues including security, trust, low service cost, easy accessibility, controllable transactions, saving time and service compatibility. Moreover, conscious customers mostly use digital banking applications because they pay attention on issues such as trust, saving money, communication ability, security and financial benefits. They also are influenced by issues as controllable transactions, service compatibility, pleasure and low service cost. Marketing issues including advertisement, saving time, variety of products and services, easy access, promotion activities, convenience, introduction by friends, their experiences as well as communication ability have also significant impact on the decision of those customers in utilizing those applications. Besides, opportunists are not influenced by any particular factor in using banking marketing digital applications.

Furthermore, this study indicated that education and occupation are significant related with a particular attitude of customers towards digital banking applications for both generations whilst gender and family income are not related, whilst no significant association found between occupation, income and the opportunists customers. Both groups of customers of generation X believe that digital marketing contributes to saving customers/consumers time and provides very fast service. Besides, most of the marketing orientated customers mainly believe that digital marketing provides immediate access to the services customer wants to use, convenience to the customer and elimination of the time outs whilst the cautious mostly think that digital marketing became famous due to the advertisement, it contributes to the elimination of time outs and provides security to the transactions. On the other hand, both groups of customers of Generation Y believe that digital marketing contributes to saving customers/consumers time. The conscious customers mainly think that digital marketing provides convenience to the customer, immediate access to the services customer wants to use, and contributes to the elimination of the time outs, provide fast service and became famous due to the advertisement. On the other hand, opportunists mainly have the opinion that digital marketing in banking sector provides friendly to the user services, convenience to the customer, contributes to save money and reduce cost for the customer as well as provides very fast service.

However, emphasis should be placed on the importance that customers of both generations give to issues including security, trust, low service cost, easy accessibility to digital applications, controllable digital transactions, saving time, service compatibility. Moreover, it is very important that both generations are influenced in using digital banking apps by promotion activities, pleasure, convenience, financial benefits. It is also important that most of the customers pay attention to the complexity of applications, saving money, introduction by friends and their experiences and the variety of products and services.

The above conclusions should be taken into consideration by policy makers in banking institutions. For example, the fact that customers are particularly concerned about security, trust and controllable transactions, which has been identified in other surveys should be a goal for those who are responsible or convincingly presenting the level of security of transactions through technology to make it possible to increase the level of consumer confidence in digital services. These insights are very helpful for managers i.e. development, optimization and customization of websites according to the needs of the customers and the extension of banking activities to other sectors of banking tourism industry.

In addition, necessary emphasis should be placed on the intergenerational differences regarding the attitudes of customers towards the use of digital banking applications and to the other demographic factors that play the most important role in how respondents' views are shaped in relation to their towards digital banking.

It is hardly possible to conduct a study that does not contain weaknesses or an element of bias. Therefore, there are some limitations in this study as well. The sample size is relatively small (169 banking customers of generations Y and X) and may not be adequate to represent the whole population as the sample may differ from the population simply.

In future work, we could extend the investigation to other prefectures of Greece, and therefore to a larger sample of respondents. It would be interesting to conduct similar study to other countries.

It would be interesting to conduct a similar survey, especially these days where coronavirus effects influenced dramatically the lives of the people, their activities with consequences to many industries. The banking industry is one of these and a survey would disclose possibly different findings.

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