

Chapter 4


The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting With SAFT-PT

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ABSTRACT

The researchers proceed with a quantitative approach resulting from a questionnaire addressed to Portuguese accountants in order to know their perceptions on the impact of adopting e-accounting to understand if they perceive it as a threat or as an opportunity for this profession. The authors found that respondents mostly believe that the level of dependency between accounting and taxation is medium, but that will sharply increase with the introduction of the e-accounting. The researchers found that most accountants perceive the implementation of e-accounting as a mix between problem and opportunity, whose main obstacle to implementation is, from the respondents' perspective, the inability of clients and employers to collaborate with this process. Additionally, data suggest that professional experience of the accountants, the development of the activity in accounting office or by other form, and finally, being certified accountants or accounting technicians are variables with impact on respondents' perceptions in this context.

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INTRODUCTION AND BACKGROUND

There is, clearly, a strong relationship between taxation and accounting, which dates back to the origin of the first one, and remains to present days. In this regard, many authors argue that the beginning of the most rudimentary forms of accounting are related to the control of taxes' collection, as stated by Ezzamel (2002) and Carmona and Ezzamel (2009).

The common basis of accounting and taxation, as well as their joint expansion, produced a mutual development of the normalization which governs these two areas (Alley & Simon, 2006; Lamb, 2009; Jones, 2018). In this scope, Lamb (2009: 579) states that "The histories of taxation and accounting are intertwined." and Alley and Simon (2006: 34) argue that "[...] both accounting and taxation are in a continual process of development [...]".

In the previous literature, many academic studies have been conducted about the issues analyzed. Thus, in the literature, it is possible to identify, in present days, three distinct models of relationship between tax and accounting: high level of dependence¹, partial dependence² and low dependence³.

This subject, although is not recent, never lost the interest of academia, especially because the globalization of markets implies the need to harmonize accounting, so that becomes a universal language. In this context, in last years some studies have arisen that question the maintenance of the proximity between accounting and taxation (Pereira, 2013; Sikka, 2017; Martinez, 2019).

Moreover, in the Portuguese case, this theme recaptures a new interest and timeliness, due to the need to comply with the e-Accounting with SAFT-PT (Standard Audit File for Tax Purposes – Portuguese Version), that is, to give compliance with a new tax obligation. This new obligation is the practical application, in the Portuguese context, of OECD (Organization for Economic Co-operation and Development) recommendations⁴.

That new tax obligation implies the strictness of companies and their accountants, especially in the timely organization of accounting documents, because tax authority will be able to control whether the accounting documentation is registered within the deadline and can punish non-compliance. In addition, the e-Accounting implementation imposes certain rules on the movement of accounts, which, also, implies special care in opening of accounts and in the introduction of taxonomies. This context implies, from the perspective of accountants, profound alterations in their paradigms of action and changes in some procedures and habits instituted among accountants.

Considering this recent challenge facing by Portuguese accountants, with this chapter the authors intend to understand whether Portuguese accountants consider adapting accounting procedures to respond to the e-Accounting with SAFT-PT obligation as a problem or threat, or rather the opposite, as an opportunity or challenge to the development of the profession, as well as to know the Portuguese accountants' perception on the impact of these changes on the level of dependency between accounting and taxation.

This study, also, aims to understand if the Portuguese accountants professional characterization variables, namely, the way they perform the activity, their years of experience and the fact that they are certified accountants or accounting technicians influence their perceptions about this theme.

The results of this chapter contribute to the knowledge in this area, allowing the authors to know the accountants' perception on the impact of the changes inherent to the fulfillment of e-Accounting with SAFT-PT at the level of independency of accounting in relation to tax obligations and tax rules.

The contributions of this article are relevant to the profession. On the one hand, because a new proximity between accounting and taxation rules may mean a setback in the process of accounting harmonization in Portugal, which consequences should deserve the consideration of all actors. On the

The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting*Table 1. Models of relationship between accounting and taxation – examples of countries classification*

Studies / Reports / year	Models of relationship		
	High level of dependency	Partial dependency	Low level of dependency
OECD (1987) ⁵	Norway ⁶	France, Germany and Italy	US [United States], UK [United Kingdom] and Netherlands
EC (1992) ⁷	Belgium, France, Germany, Greece and Luxembourg		UK and some Nordic countries
Hoogendoorn (1996) ⁸	France, Germany, Belgium, Finland, Sweden and Italy		UK, Ireland, Denmark, Czech Republic, Norway, Poland and Netherlands
Blake <i>et al.</i> (1997)	Continental European countries		Anglo-Saxon countries
Lamb <i>et al.</i> (1998)	France and Germany		US and UK
Sampaio (2000)	Germany, Japan, Norway, Sweden, Greece, Finland, Switzerland, Italy and Belgium	France, Spain and Portugal	Netherlands, Canada, US, UK and Ireland
Aisbitt (2002)	Continental European countries		Anglo-Saxon countries
Francis <i>et al.</i> (2002)	Germany and Japan	Nordic countries and the developing systems, both Latinos and Asians	North America and other Anglo-Saxon countries
Freedman (2008)	Germany and Sweden		US and UK

other hand, the process of implementing of e-Accounting with SAPT-PT obligation is still an ongoing process, so understanding the position of accountants can allow, in particular, the creation of training or clarification sessions directed to target audiences.

This chapter is structured in five parts: introduction, literature review, research methodology, results as well as their discussion and conclusions.

LITERATURE REVIEW RELEVANT TO THE TOPIC

Concerning the relation of interdependence between accounting and taxation, Table 1 summarizes the analysis to the existing work on this issue, by sorting a comparative study on some countries' classification.

As you can see, from the analysis of data presented in Table 1, there is a set of studies that identify two models of dependency; however, there are other studies that point to a third model of dependence between accounting and taxation, in use in some countries, such as Portugal. This third model is applicable in cases where there is a moderate dependence between accounting and taxation, and income tax is levied on accounting results adjusted outside the accounting in accordance with tax rules (Sampaio, 2000).

In addition, the information in Table 1 suggests that there are two large blocks identified, on the one hand, the Anglo-Saxon countries, identified as having a little level or no level of dependency between accounting and taxation, and countries of Continental Europe, in the opposite situation, with a greater or lesser level of dependency.

In the Portuguese case, the model in use, as already mentioned, is the partial dependency, however, in some areas, namely in the depreciation of assets, the relationship between accounting and taxation is so intense that occasionally occurs a phenomenon known as «tax accounting»⁹.

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As states Sampaio (2000), in the Portuguese case, the relation of partial dependency between accounting and taxation is not new, it dates back from the tax reform of the early twentieth century, in the field of the corporate tax income, which imposed the calculation of tax profits based on accounting profits, with some extra-accounting corrections. In this perspective, can be mentioned a few landmarks of the recent history of Portuguese taxation to justify the relationship with accounting rules:

The tax Reform from 1922¹⁰ brought as novelty, at the companies' scope, the taxation of real income, which implied the existence of an accounting system capable of calculating, with a high degree of accuracy and objectivity, that profit.

In addition, the tax Reform of the 1960s years, with the approval, in 1963, of the *Código da Contribuição Industrial* (the Industrial Tax Code), brought as a novelty the following recommendation, in the article 22nd: the "taxable income will be reported to the account of profits or gains and losses established in obedience to good accounting principles."¹¹ It should be noted that this recommendation which would only be put into practice with the publication of the first *POC - Plano Oficial de Contabilidade*¹², approved by the Decree - Law n.º. 47/77 of June 7th.

This means that Portugal only really began to use the model of partial dependency after the adoption of generally accepted accounting standards, which only occurred at the final of 1970s years.

Furthermore, the authors found that there is no widely accepted model of relationship between accounting and taxation, because there are advantages and disadvantages mentioned in each one. Thus, on the one hand, some authors advise a greater harmonization and dependence of these two regulations, in order to simplify tax obligations and to minimize tax and accounting compliance costs of companies, highlighting substantial gains in the area of tax compliance. On the other hand, others arguments pointed to greater separation and autonomy of tax and accounting regulations, due to their different objectives, pointing to the alignment of the two normative as an obstacle to accounting standards harmonization, which is necessary to the globalization of markets. However, some authors recognized the increasing of tax compliance's problems, resulting from the smaller coordination involving these two regulations. In this scope, Table 2 summarizes both lines of arguments presents in the literature review.

As can be seen by the analysis of Table 2 content, the dependence between accounting and taxation has not been a consensual matter in academia, so there are arguments for and against the proximity (harmonization) between accounting and tax rules. Some authors, as Blake *et al.* (1997) and Freedman (2008), performed works which confront the arguments for and against harmonization of these normalizations.

However, it should be noted that the globalization of the economies, namely the internationalization and global development of many business groups, requires a larger harmonization of accounting standards all over the world, to meet the need of global information; these facts may enhance the growing misalignment of the regulations in analyzing. As states Freedman (2008, p.1) "[...]recent developments in accounting may be increasing divergence rather than reducing it." Position also advocated by Porcano and Tran (1998: 89) when they claim that "Compliance with IASs [International Accounting Standard] is difficult when the tax system, designed at the national level, dominates accounting practice."

This may occur because accounting aims tend to be a universal language, which produces information understandable by all potential stakeholders, while taxation does not follow this globalization and intend to respond to the needs for revenue collection of each State.

Thus, despite the strong arguments presented in favour of a bigger harmonization of these two regulations, some authors consider the current economic circumstance more conducive to scenarios against the coordination of them and a little chance of convergence of these two regulations, however, in the

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Portuguese case, the obligation of e-Accounting with SAFT-PT may presents as a potential alteration in this trend.

Table 2. Summary of arguments against and in favor of harmonization of regulations between accounting and taxation

Authors / Countries ¹³	Arguments against harmonization	Arguments in favor of harmonization
Green (1995)/UK	- Different objectives require unequal rules	
Blake <i>et al.</i> (1997)/ Sweden	- It is a barrier to the international harmonization of accounting normalization - It is an obstacle to implementing good accounting practice - Some tax rules have a distortive effect on the financial reports	- Simplification of procedures and the consequence reduction of compliance costs - In the perspective of tax authorities, it simplifies the process of tax auditing
Sampaio (2000)/Portugal	- Different objectives in determining the company's results require unequal rules - Some tax legislation objectives ¹⁴ are not compatible with the objectivity of accounting standards - It ties the financial reports to the tax rules, as though the State were a stakeholder more important than all the others	
Aisbitt (2002)/UK	- It complicates the interpretation of financial statements and undertakes its aim to support decision making by the stakeholders	
Freedman (2004)/UK	- Different objectives require unequal rules	
Freedman (2008)/UK	- Different objectives require unequal rules - The model of partial dependence, that means regulation with exceptions, can make the system more confusing - The interrelationship between the two regulations, in the partial dependence model, can create gray areas conducive to tax evasion - Harmonization may distort the tax base, causing, namely, problems of tax equity	- The harmonization allows the simplification of accounting and tax compliance which provides a lower cost of compliance and the increasing of transparency - It facilitates the monitoring of tax noncompliance - Two separate regulations can cause confusion in the concepts and difficulties in the managing of the relationship between two systems with completely different rules about the same issues - It can reduce the possibility of data manipulation
Hanlon and Heitzman (2010)/US		- Reducing compliance costs - The increase of the tax base and the cutting in the rates - Decrease of earnings management (with tax saving purpose).
Addeh (2016)/U	- Potentiates the manipulation of earnings management in order to reduce taxation	
Dridi & Boubaker (2015)/Tunisia	- Potentiates the manipulation of earnings management in order to reduce taxation	
Sikka (2017)	- "financial reporting is focused on the assumed interests of investors whereas taxation is concerned about levying taxes on realized corporate profits in accordance with the law" (p. 400)	

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In this context, as already mentioned, this chapter aims to understand what is the perception of certified accountants about the impact of e-Accounting on accounting and taxation rules harmonization, as well as on the work of those professionals.

RESEARCH METHOD

In order to meet the stated objectives, the researchers propose to carry out a quantitative work, which is based on the collection of the Portuguese accountants' perceptions on the theme under study.

Aiming to collect the data, following the suggestion of Raupp and Beuren (2006), a survey was addressed to Portuguese certified accountant and accounting technicians, then they are our target population.

The authors opted for the application of an electronic questionnaire, by launching the questionnaire in the community "Members of the Group Accountants" on the internet, which includes 13,853 members, on the official forum of the Portuguese Organization of Certified Accountants (OCC¹⁵) and in other small blogs/forum/websites frequented by Portuguese professionals.

It is important to emphasize that in this questionnaire, certified accountants and the accounting technicians were invited to undertake a self-evaluation of their perceptions about these issues.

The questionnaire aims to fulfil the following specific objectives:

- To construct a socio-demographic, professional and technical characterization of the respondents;
- To assess their perception regarding the application of the e-Accounting with SAFT-PT;
- To assess their perception concerning the impact of e-Accounting with SAFT-PT on the level of dependency between accounting and taxation;
- To assess their self-evaluation regarding the costs of implementing e-Accounting with SAFT-PT.

In order to achieve all the objectives previously outlined, the following research hypotheses were formulated to be tested:

H1: There is a relation between the professionals' category¹⁶ and their perceptions about the implementation of e-Accounting.

H2: There is a relation between the professionals' way of develop the activity¹⁷ and their perceptions about the implementation of e-Accounting.

H3: There is a relation between the professionals' years of experience and their perceptions about the implementation of e-Accounting.

To achieve the stated objectives, the authors performed statistical analyzes of the collected data, using SPSS version 21.

Thus, apart from the statistical frequency analysis a bivariate analysis were performed to verify if may be accept or decline the research hypotheses formulated. The statistical bivariate analysis performed aims to determine whether differences between the professional characteristics of the target population, can influence the professionals' perceptions on this theme.

In the bivariate analysis, due to the characteristics of our data the authors use nonparametric tests: the Mann-Whitney test and the Kruskal Wallis Test. To measure the strength and direction of the relation between variables the researchers use the Spearman Correlation (Pestana & Gageiro, 2000). The

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adoption of nonparametric tests, rather than parametric tests, is justified by the lack of data normality, as well as by the using of nominal and ordinal variables frequently based on five point Likert scales.

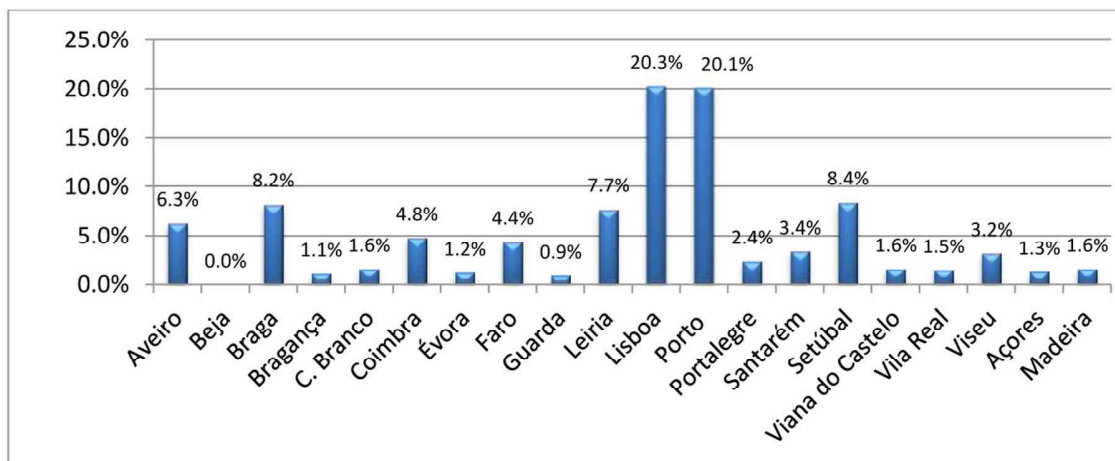
RESULTS AND RESULTS DISCUSSION

In this section the authors will present the results of the statistical analysis performed, both the results of the descriptive statistics and the results of the hypothesis tests (bivariate analysis).

Figures 1 and Table 3 present the socio-demographic and professional technical characteristics of our respondents.

The data presented in Figure 1 are relevant to this study because they allow the researchers to verify that the geographic distribution of our respondents is representative of the entire national territory, with greater emphasis on regions with greater population density.

Figure 1. Geographical origin of respondents in Portugal



Regarding the data in Table 3, the researchers verify that most of respondents are certified accountants (84.6%) and they are predominantly female (71%).

With regard to the age of respondents, the most significant data is that about 63% of professionals are between 35 years old and 49 years old. The researchers, also, verify that, despite the complexity involved and the demands of study and updates, there are quite a number of professionals in activity (about 2,7%) whose ages are considerably above the statutory retirement age (65 years old).

As regards professional experience, 81.4% of respondents have more than 10 years of tax experience, so the authors can consider that the respondents are a professionally experienced group. In addition, most respondents work in accounting offices and have, in terms of number of clients, a medium-sized client portfolio ($>50 \leq 100$).

The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting*Table 3. Summary of respondents' socio-demographic and professional technical variables*

Socio-demographic and professional technical variables	Categories	%
Age	Up to 25 years old	1.6%
	> 25 to 35 years old	12.5%
	> 35 to 50 years old	62.6%
	> 50 to 65 years old	20.6%
	> 65 years old	2.7%
Gender	Male	29.0%
	Female	71.0%
Professional category	Certified accountants	84.6%
	Accounting technicians	15.4%
Professional experience	Up to 1 year	0.9%
	> 1 to 5 years	6.5%
	> 5 to 10 years	11.2%
	> 10 to 25 years	56.4%
	> 25 years	25.0%
Ways of activity development	In an accounting office	60.6%
	In an accounting department	16.1%
	As a self employed	22.2%
	Other situations	1.1%
Number of clients/employers	Up to 20	1.6%
	> 20 to 50	12.5%
	> 50 to 100	62.6%
	> 100 to 200	20.6%
	> 200 to 300	20.6%
	> 300	2.7%

Regarding the data presented in Table 3, the authors highlight the respondents' gender data, because the latest known data on certified accountants point to an equitable distribution between men and women, which is very different from the data presented by our respondents. At the beginning, these data were the subject of our concern, due to the possibility of sample bias, however, the researchers verified, through cross tables and Pearson Chi-Square test (χ^2), that there was no statistically significant relationship between the gender of respondents and their perceptions about this theme. In addition, the sample is also composed by accounting technicians, who represent 15% of respondents, most of whom are women (84%)¹⁸.

Figures 2 and 3 show the respondents' perception about the level of dependency between accounting and taxation in Portugal, as well as the increase in that level of dependency caused by the implementation of e-Accounting.

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Figure 2. Respondents' perception on the level of dependence of accounting and taxation in Portugal (before the implementation of e-Accounting)

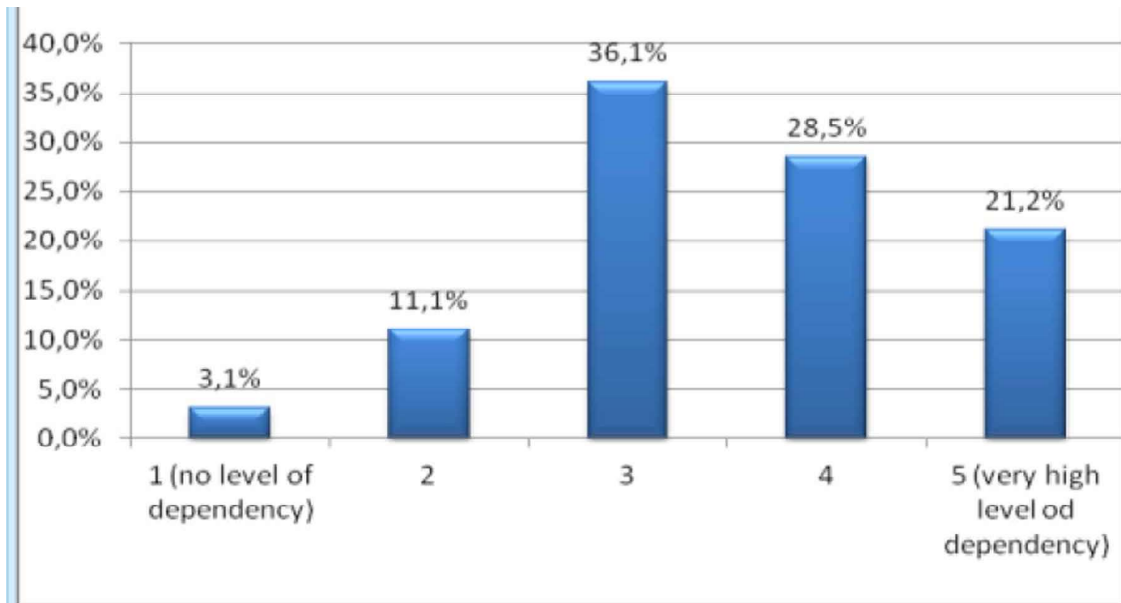
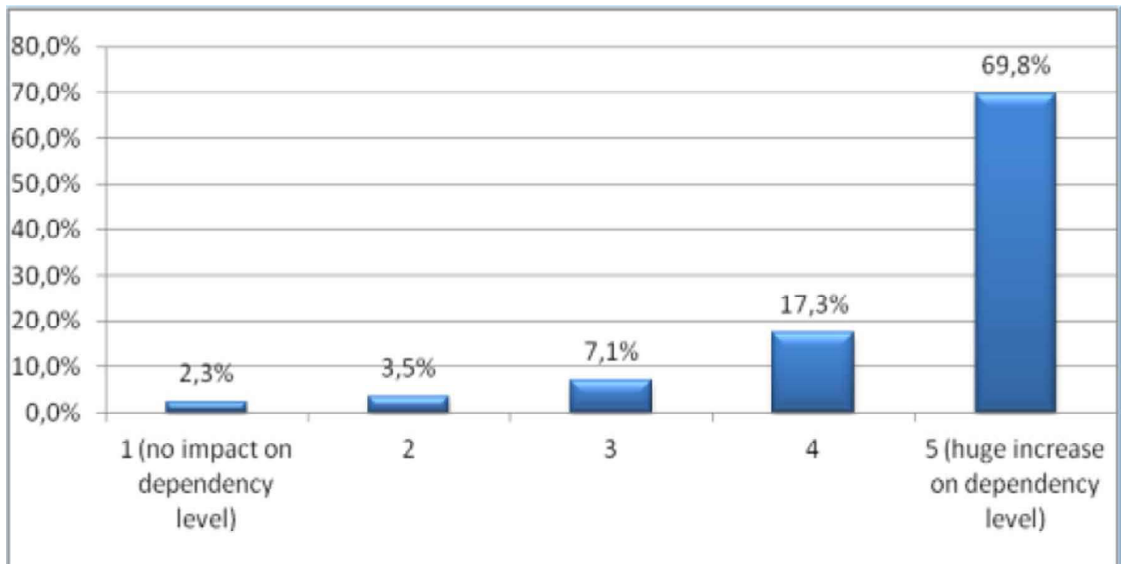


Figure 3. Respondents' perception of the impact of e-Accounting implementation on the increasing of the level of dependence of accounting and taxation in Portugal



The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting*Table 4. Summary of respondents' perception about e-Accounting implementation*

	Categories	Number	%
Problem vs. opportunity	1 (Unsurpassed problem)		13.4%
	2		28.0%
	3		35.8%
	4		15.9%
	5 (Opportunity)		6.9%
Identification of the 3 main obstacles to the implementation of e-accounting	Failure of customers / employer to meet the deadlines for delivery of accounting documents	1 228	
	Insufficiency of human resources to comply with all requirements	891	
	The clients portfolio / company size does not justify the necessary monetary investment	537	

The analysis of the data presented in Figures 2 and 3 shows that the current level of dependence between accounting and taxation is classified, by the respondents, mostly as medium (level 3 – 36,1%), however, most of them perceive that the implementation of e-Accounting will increase significantly the level of dependency (level 5 - 69.8%).

It should be noted that the level of dependency between accounting and taxation perceived by Portuguese accountants is in line with data from previous studies that point to a partial dependence model in the Portuguese case.

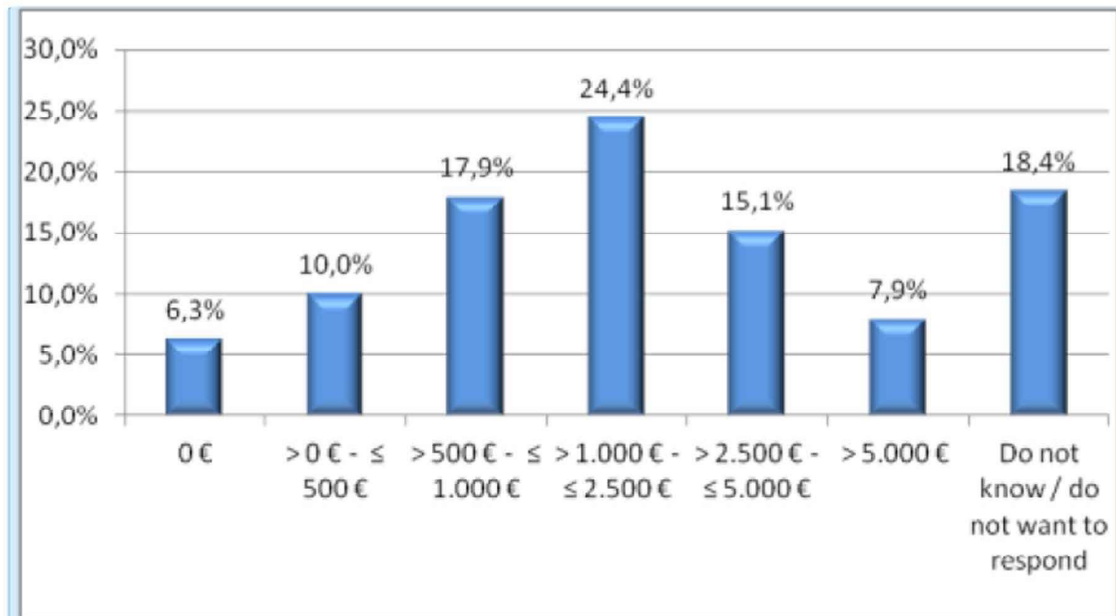
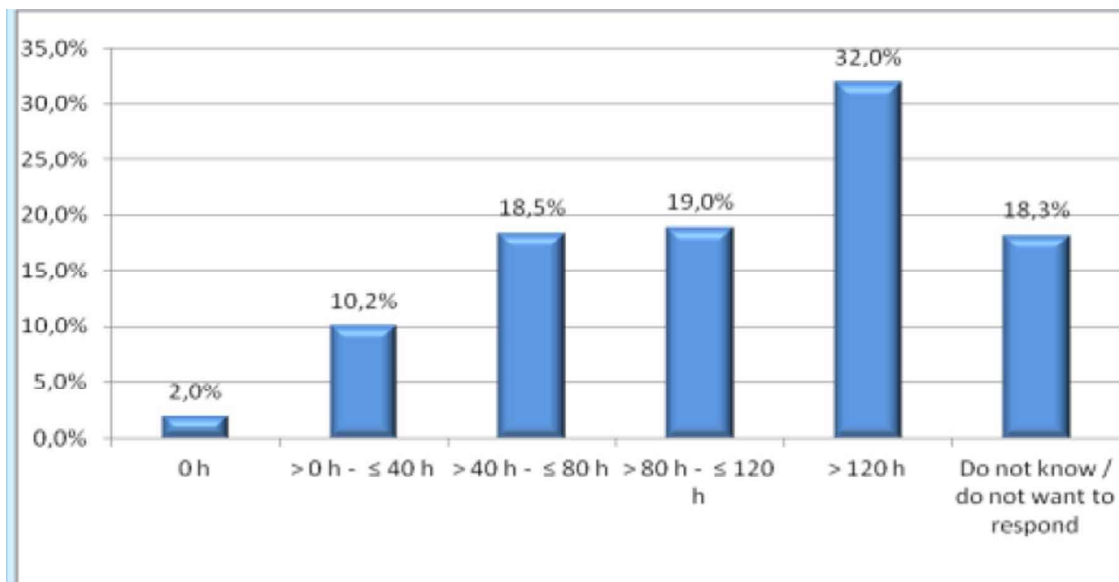
In this point, it is important to highlight that, contrary to the international trend of the last years of greater distance between accounting and taxation, in order to allow a greater harmonization of accounting at international level, in the Portuguese case, the implementation of e-Accounting promises to bring closer again these two strands of the business context.

Table 4 presents the perception of Portuguese accountant respondents on the impact of e-Accounting implementation, that is, they see it as an unsolved problem or as an opportunity for professional growth, due to the change it provides. Table 4, also, presents the three biggest barriers to e-Accounting implementation identified by the respondents.

From the data in Table 4 the authors highlight the following aspects: (i) There are more accounting professionals who classify the implementation of e-Accounting as an unsolved problem than those who have the capacity to understand it as an opportunity. (ii) The biggest obstacle to e-Accounting implementation, from the respondents' point of view, is the "Failure of customers / employers to meet deadlines for delivery of accounting documents".

The results suggest that most respondents are very apprehensive about the e-Accounting implementation process, some accountants fear not being able to implement this. It should be noted, however, that the greatest fear of the responding accountants lies in the inability of their clients and employers to meet the new requirements.

Figures 4 and 5 show the respondents' perception on the e-Accounting impacts in training needs and internal working hours investments, as well as in value of the implementing costs.

The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting*Figure 4. Respondents' perception of the cost of e-accounting implementation (value)**Figure 5. Respondents' perception of the cost of e-accounting implementation (hours)*

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Table 5. Effects of professional technical variables on professionals' perceptions

H1.1	(1)	H_0 : There are no differences in professionals' perception of the level of dependency between accounting and taxation, depending on their professional category (certified accountant and accounting technician); H_a : There are differences in professionals' perception of the level of dependency between accounting and taxation, depending on their professional category (certified accountant and accounting technician).
	(2)	Mann-Whitney Test: $U(1574) = 159440$; $p = 0.781 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in the perception of dependency of accounting and taxation between certified accountants and accounting technicians.
H1.2	(1)	H_0 : There are no differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on their professional category (certified accountant and accounting technician); H_a : There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on their professional category (certified accountant and accounting technician)
	(2)	Mann-Whitney Test: $U(1580) = 147.782,500$; $p = 0.004 < 0.05$ Spearman Correlation: $\rho = -0.044$; $p = 0.083 < 0.05$
	(3)	There are statistically significant differences in the perception of the increasing in the level of dependency of accounting and taxation between certified accountants and accounting technicians. Certified accountants see a more pronounced increase in the level of dependency than accounting technicians. There is no significant correlation.
H1.3	(1)	H_0 : There are no differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on their professional category (certified accountant and accounting technician); H_a : There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on their professional category (certified accountant and accounting technician).
	(2)	Mann-Whitney Test: $U(1580) = 157404,500$; $p = 0.375 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in the perception of problem <i>versus</i> opportunity between certified accountants and accounting technicians.
H1.4	(1)	H_0 : There are no differences in professionals' perception of the e-accounting implementation costs, depending on their professional category (certified accountant and accounting technician); H_a : There are differences in professionals' perception of the e-accounting implementation costs, depending on their professional category (certified accountant and accounting technician).
	(2)	Mann-Whitney Test: $U(1289) = 92826$; $p = 0.298 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in the perception the e-accounting implementation costs between certified accountants and accounting technicians.
H2.1	(1)	H_0 : There are no differences in professionals' perception of the level of dependency between accounting and taxation, depending on the way they develop their activity; H_a : There are differences in professionals' perception of the level of dependency between accounting and taxation, depending on the way they develop their activity.
	(2)	Kruskal Wallis Test: $H(1574) = 5497$; $p = 0.139 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in the professionals' perception of dependency, depending on the way they develop their activity.
H2.2	(1)	H_0 : There are no differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on the way they develop their activity; H_a : There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on the way they develop their activity.
	(2)	Kruskal Wallis Test: $H(1580) = 7243$; $p = 0.65 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in professionals' perception of the increasing in the level of dependency of accounting and taxation, depending on the way they develop their activity.
H2.3	(1)	H_0 : There are no differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on the way they develop their activity; H_a : There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on the way they develop their activity.
	(2)	Kruskal Wallis Test: $H(1580) = 0.409$; $p = 0.938 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in professionals' perception of problem <i>versus</i> opportunity, depending on the way they develop their activity.
H2.4	(1)	H_0 : There are no differences in professionals' perception of the e-accounting implementation costs, depending on the way they develop their activity; H_a : There are differences in professionals' perception of the e-accounting implementation costs, depending on the way they develop their activity.
	(2)	Kruskal Wallis Test: $H(1289) = 50600$; $p = 0.000 < 0.05$ Spearman Correlation: $\rho = -0,176$; $p = 0.000 < 0.05$
	(3)	Reject the null hypothesis (H_0). There are statistically significant differences in the professionals' perception about the e-accounting implementation costs, depending on the way they develop their activity. Higher implementation costs are perceived by those who work in an accounting office (except for those that come with an "other" classification). There is a significant negative correlation between the two variables.

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Table 5. Continued

H3.1	(1)	H_0 : There are no differences in professionals' perception of the level of dependency between accounting and taxation, depending on their professional experience; H_a : There are differences in professionals' perception of the level of dependency between accounting and taxation, depending on their professional experience.
	(2)	Kruskal Wallis Test: $H(1570) = 14,009$; $p = 0.007 < 0.05$ Spearman Correlation: $\rho = -0.056$; $p = 0.028 < 0.05$
	(3)	Reject the null hypothesis (H_0). There are statistically significant differences in the professionals' perception of the level of dependency between accounting and taxation, depending on their professional experience. Higher levels of professionals' perception of dependency are present in professionals with less years of experience and those in the "> 10 to 25 years" range and the lower levels of dependency perception in professionals with more professional experience. There is a significant negative correlation between the two variables.
H3.2	(1)	H_0 : There are no differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on their professional experience; H_a : There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on their professional experience.
	(2)	Kruskal Wallis Test: $H(1576) = 16,428$; $p = 0.002 < 0.05$ Spearman Correlation: $\rho = -0.056$; $p = 0.026 < 0.05$
	(3)	Reject the null hypothesis (H_0). There are statistically significant differences in the professionals' perception of the increasing in the level of dependency, depending on their professional experience.. Higher levels of the perception of the increase in dependency are present in professionals with less years of experience and those in the "> 10 to 25 years" range and lower levels of increase in dependency are perceived by professionals in the "> 1 to 5 years" range. There is a significant negative correlation between the two variables.
H3.3	(1)	H_0 : There are no differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on their professional experience; H_a : There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on their professional experience.
	(2)	Kruskal Wallis Test: $H(1576) = 4.887$; $p = 0.299 > 0.05$
	(3)	Not reject the null hypothesis (H_0): there are no statistically significant differences in the professionals' perception of problem <i>versus</i> opportunity, depending on their professional experience.
H3.4	(1)	H_0 : There are no differences in professionals' perception of the e-accounting implementation costs, depending on their professional experience; H_a : There are differences in professionals' perception of the e-accounting implementation costs, depending on their professional experience.
	(2)	Kruskal Wallis Test: $H(1285) = 27,859$; $p = 0.000 < 0.05$ Spearman Correlation: $\rho = 0.127$; $p = 0.000 < 0.05$
	(3)	Reject the null hypothesis (H_0). There are statistically significant differences in the professionals' perception about the e-accounting implementation costs depending on their professional experience. Higher implementation costs are perceived by those who are at the extremes, that is, professionals with less and more experience. There is a significant positive correlation between the two variables.

Table 6. Summary of tests results - I

Explanatory variables tested	Professionals' perceptions	Results
Professional category (certified accountants or accounting technicians)	Professionals' perception of dependency between accounting and taxation	X
	Professionals' perception on the increasing in the level of dependency between accounting and taxation due to the e-Accounting implementation	X
	Professionals' perception about the consequences of the adoption of e-accounting (problem or opportunity)	X
	Professionals' perception of the e-Accounting implementation costs.	✓
Way they develop their activity	Professionals' perception of dependency between accounting and taxation	X
	Professionals' perception on the increasing in the level of dependency between accounting and taxation due to the e-Accounting implementation	X
	Professionals' perception about the consequences of the adoption of e-accounting (problem or opportunity)	X
	Professionals' perception of the e-Accounting implementation costs.	✓
Professional experience	Professionals' perception of dependency between accounting and taxation	✓
	Professionals' perception on the increasing in the level of dependency between accounting and taxation due to the e-Accounting implementation	✓
	Professionals' perception about the consequences of the adoption of e-accounting (problem or opportunity)	✓
	Professionals' perception of the e-Accounting implementation costs	✓

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Table 7. Summary of tests results - II

Research Hypotheses	Statistic Hypotheses simplified	Result	Signal
H1	There are differences in professionals' perception of the level of dependency between accounting and taxation among certified accountant and accounting technician.	Not validated	
	There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation among certified accountant and accounting technician.	Validated	?
	There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity among certified accountant and accounting technician.	Not validated	
	There are differences in professionals' perception of the e-accounting implementation costs among certified accountant and accounting technician.	Not validated	
H2	There are differences in professionals' perception of the level of dependency between accounting and taxation, depending on the way they develop their activity.	Not validated	
	There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on the way they develop their activity.	Not validated	
	There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on the way they develop their activity.	Not validated	
	There are differences in professionals' perception of the e-accounting implementation costs, depending on the way they develop their activity.	Validated	-
H3	There are differences in professionals' perception of the level of dependency between accounting and taxation, depending on their professional experience.	Validated	-
	There are differences in professionals' perception of the increasing in the level of dependency between accounting and taxation due to e-accounting implementation, depending on their professional experience.	Validated	-
	There are differences in the professionals' ability to view e-accounting as an unsolved problem or as an opportunity, depending on their professional experience.	Not validated	
	There are differences in professionals' perception of the e-accounting implementation costs, depending on their professional experience.	Validated	+

Analyzing the information contained in the Figures 4 and 5, it can be seen that most respondents classified their e-Accounting implementation costs, in hours, in more than 120 hours and, in value, mostly between 1,000 € and 2,5000 €. Note, however, that only about 55% of accountants said they already have their professional software certified with SVAT (Validation Seal of the Tax and Customs Authority), which means that many accountants will still have, among other costs, the cost of certifying their professional software, or purchasing new software.

Next, nonparametric tests were performed on previously formulated hypotheses - the results of these tests are summarized in Table 5.

(1) Operationalization; (2) Tests, results and correlations (Strength and sign); (3) Conclusion

According to the data shown in the Table 5 and 6, is possible to verify that:

- The variable “professional experience” has explanatory capacity on professionals' perception of dependency between accounting and taxation. The results suggest that higher levels of professionals' perception of dependency are present in professionals with less years of experience and those in the “> 10 to 25 years” range.

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- The variable “professional category” (certified accountants or accounting technicians) and “professional experience” have explanatory capacity on the professionals’ perception on the increasing in the level of dependency between accounting and taxation. The results suggest that certified accountants see a more pronounced increase in the level of dependency than accounting technicians and the higher levels of the perception of the increase in dependency are present in professionals with less years of experience and those in the “> 10 to 25 years” range.
- The variables “way of development of the activity” and “professional experience” have explanatory capacity on the professionals’ perception of the e-Accounting implementation costs. The results suggest that the higher implementation costs are perceived by those who work in an accounting office and by those who are at the extremes concerning professional experience, that is, professionals with
 - with the smallest and the largest less professional experience.
 - None of the variables under study has ability to explain the professionals’ perception about the consequences of the adoption of e-Accounting, that is, more as an unsolved problem, or more as an opportunity, namely to “educate” their clients / employers.
 - The most capable explanatory variable is professional experience, which has impacts on the perception on the level of dependency between accounting and taxation, as well as on the perception of increasing in the level of dependency and on the perception of e-accounting implementation costs.

The results of the validation and no validation of our research hypotheses are summarized in Table 7.

As can be seen in the information presented in Table 7, the results obtained in the analysis partially validated H1, H2 and H3. None of the research hypotheses has been fully validated, but neither has been totally rejected.

According to the results of the tests performed to H1.2 we verify that the certified accountant respondents see a more pronounced increase in the level of dependency resulting from the e-Accounting implementation than accounting technicians. From our perspective, the explanation for this difference in perception may be the difference in the levels of responsibility assumed in this process by both categories of professionals. In this process the responsibility for creating the conditions for the implementation of e-Accounting lies with the certified accountant, although the accountant may delegate some process tasks to the accounting technicians.

From the tests performed to H2.4 it was found that higher implementation costs are perceived by those who work in an accounting office compared to those who work in accounting and tax departments in larger companies. In our view, this higher cost perception in those who work in accounting offices may be motivated by the need of the accounting offices bear with the costs directly and, then, to pass them on to their customers.

H3.4 testing has shown that younger and older professionals are more aware of the costs of implementing e-accounting than the rest. From our perspective, these differences can have two distinct explanations: regarding to the younger ones, because they are at the beginning of their careers, they feel these changes as added costs; for the older accountants, because they are at the end of their careers and the do not expected to make new investments.

The explanatory hypotheses formulated about the differences detected in the tests performed to H1.2, H2.4 e H3.4 may be excellent clues for future research on this subject.

CONCLUSIONS

Concerning the characterization of the respondents, the authors verify a predominance of certified accountants. Consequently, there are a very small number of answers obtained from accounting technicians, which suggests a greater concern of certified accountants with this theme.

The researchers, also, verify that the level of professional experience of the respondents is high (81,4% of respondents have more than ten years of experience). The respondents mostly develop their activity outsourcing, via accounting offices, with customer portfolios' composed essentially from 51 to 100 clients.

The authors, also, verify that the accounting professionals who answered the questionnaire mostly perceive the level of dependency between accounting and taxation as medium (level 3), however, most of them perceive that the implementation of e-Accounting will increase significantly the level of dependency.

Most respondents perceive the implementation of e-Accounting in the midway between the problem and the opportunity, but the number of professionals who view these changes as an unsolved problem is bigger than those who can understand it as an opportunity to improve the profession. Moreover, in their point of view, the biggest obstacle to the implementation of e-Accounting is the "Failure of customers / employers to meet deadlines for delivery of accounting documents", that is, they put in question more the ability of their customers and employers to collaborate in this process, than their own ability to implement it.

Regarding e-Accounting implementation costs, it should be noted that most respondents pointed to costs in hours already exceeding 120 hours and to costs in value, mainly in the range of between 1,000 € and 2,500 €.

In the context of implementation costs, two facts stand out: (i) almost half of the respondents do not have their professional software certified with the tax and customs authority certification seal, which is mandatory, which will increase the costs of many accounting professionals; (ii) that the majority of the respondents develop their professional activity in accounting firms, this may lead to difficulties in passing on the costs of this process to clients (especially due to the small size of their clients).

Finally, the bivariate analysis allowed the authors to draw some partial profiles regarding the professionals' perceptions about this subject. Thus, the results suggest that: (i) higher levels of professionals' perception of dependency between accounting and taxation are present in professionals with less years of experience and those in the "> 10 to 25 years" range. (ii) Certified accountants see a more pronounced increase in the level of dependency between accounting and taxation than accounting technicians and the higher levels of the perception of the increase in that dependency are present in professionals with less years of experience and those in the "> 10 to 25 years" range. (iii) the higher implementation costs are perceived by those who work in an accounting office and by those who are at the extremes concerning professional experience, that is, professionals with less and more experience.

The researchers propose some future lines of research: firstly, it would be important to check whether the implementation of e-Accounting implies, for some professionals, the hiring of new employees; secondly, to understand which variables may explain the ability of professionals to assume, or not, this process as an unsolved problem, or, on the contrary, as an opportunity to change processes and "to educate" their clients and employers. Finally, the hypotheses formulated to explain the results of some tests with statistically significant differences may also provide clues for future research on this problem.

The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting**REFERENCES**

- Addeh, R. (2016). *Book-tax differences and the persistence of accounting earnings* (Doctoral dissertation). University of Southampton.
- Aisbit, S. (2002). Tax and accounting rules: Some recent developments. *European Business Review*, 14(2), 92–97. doi:10.1108/09555340210420064
- Alley, C. & Simon, J. (2006, Summer). The Use of Financial Reporting Standards-Based Accounting for the Preparation of Tax Returns. *International Tax Journal*, 31-48.
- Blake, J., Akerfeldt, K., Fortes, H. J., & Gowthorpe, C. (1997). The relationship between tax and accounting rules – the Swedish Case. *European Business Review*, 97(2), 85–91. doi:10.1108/09555349710162599
- Carmona, S., & Ezzamel, M. (2009). Ancient Accounting. In J. Edwards & S. Walker (Eds.), *The Routledge Companion to Accounting History* (pp. 73–94). London: Routledge.
- Dridi, W., & Boubaker, A. (2015). An assessment of the linkage between financial reporting and taxation in Tunisia. *International Business Research*, 8(4), 168. doi:10.5539/ibr.v8n4p168
- EC. (1992). *Ruding Report*. Accessed in February 14th, 2019, Available at: http://aei.pitt.edu/1332/1/ruding_tax_report.pdf
- Ezzamel, M. (2002). Accounting and redistribution: The palace and mortuary cult in the Middle kingdom, ancient Egypt. *The Accounting Historians Journal*, 29(1), 61–103. doi:10.2308/0148-4184.29.1.61
- Francis, J., Schipper, K., & Vincent, L. (2002). Earnings announcements and competing information. *Journal of Accounting and Economics*, 33(3), 313–342. doi:10.1016/S0165-4101(02)00058-7
- Freedman, J. (2004). Defining Taxpayer Responsibility: In Support of a General Anti-Avoidance Principle. *British Tax Review*, 4, 331-356.
- Freedman, J. (2008). *Financial and Tax Accounting: Transparency and 'Truth'*. University of Oxford Faculty of Law Legal Studies Research Paper Series, Working Paper No 02/2008. Accessed on April 3rd, 2019, in University of Oxford: <http://www.competition-law.ox.ac.uk/tax/documents/SSRN.Transp.pdf>
- Green, S. (1995). Accounting Standards and Tax Law: Complexity, Dynamism and Divergence. *British Tax Review*, 5, 445–451.
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50(2-3), 127–178. doi:10.1016/j.jacceco.2010.09.002
- Hoogendoorn, M. N. (1996). Accounting and Taxation in Europe – A Comparative Overview. *European Accounting Review*, 5(4), 783–794. doi:10.1080/09638189600000050
- Jones, M. J. (2018). Domesday book: An early fiscal, accounting narrative? *The British Accounting Review*, 50(3), 275–290. doi:10.1016/j.bar.2017.10.002
- Lamb, M. (2009). Taxation. In J. Edwards & S. Walker (Eds.), *The Routledge Companion to Accounting History* (pp. 579–597). London: Routledge.

The Perception of Portuguese Accountants on the Impact of the Implementation of E-Accounting

Lamb, M., Nobes, C., & Roberts, A. (1998). International Variations in the connections between Tax and Financial Reporting. *Accounting and Business Research*, 28(3), 173–188. doi:10.1080/00014788.1998.9728908

Martinez, A. L. (2019). *Why is IFRS Not a Good Starting Point for a Tax Base?* doi:10.2139/ssrn.3383061

Pereira, M. (2013). O impacto da relação entre a contabilidade e a fiscalidade nas demonstrações financeiras. *XIV Congresso internacional de Contabilidade e Auditoria*.

Porcano, T., & Tran, A. (1998). Relationship of tax and financial accounting rules in Anglo-Saxon countries. *The International Journal of Accounting*, 33(4), 433–454. doi:10.1016/S0020-7063(98)80003-4

Raupp, F. M., & Beuren, I. M. (2006). Metodologia de Pesquisa aplicável às Ciências Sociais. In I.M. Beuren (Ed.), *Como Elaborar Trabalhos Monográficos em Contabilidade* (3rd ed., pp. 76-97). São Paulo: Editora Atlas.

Sampaio, M. F. (2000). *Contabilização do Imposto sobre o Rendimento das Sociedades*. Lisboa: Vislis Editores.

Sikka, P. (2017). Accounting and taxation: Conjoined twins or separate siblings? *Accounting Forum*, 41(4), 390–405. doi:10.1016/j.accfor.2016.12.003

ENDNOTES

- ¹ Accounting practices determined by tax rules or the opposite.
- ² System that is based on the accounting results, to which extra-accounting corrections, that only reflect the issues where there are differences between accounting and tax rules, are made, in order to obtain the tax results. The Portuguese case, in the last decades, has been classified in the context of partial dependence.
- ³ Total independence between tax and accounting rules.
- ⁴ <http://www.oecd.org/ctp/administration/guidancenote-guidancefordevelopersofbusinessandaccountingsoftwareconcerningtaxauditrequirements.htm> (accessed in 02.04.2019)
- ⁵ Referred by Porcano and Tran (1998)
- ⁶ Accounting practices determined by tax rules: according to that work, Norway came to the extreme of prohibiting the application of accounting rules contrary to the tax laws.
- ⁷ Ruding Report - It should be noted that this study only had as object of study the Union European countries.
- ⁸ It should be noted that this study only had as object of study the Union European countries.
- ⁹ Phenomenon that means the use of tax rules for both contexts, accounting and taxation.
- ¹⁰ Law No. 1368, from 21/09
- ¹¹ What is even until our days the base of Portuguese partial dependence model. Currently, the 17th article of the CIRC [*Código do Imposto sobre o Rendimento das Pessoas Coletivas*], the Portuguese code of income tax, is considered the bridge between accounting and taxation rules.
- ¹² First Portuguese Official Accounting Plan.
- ¹³ Nationality of the author(s) of each study

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- ¹⁴ Particularly, the objectives of a secondary nature, as those who want to “[...] influence the behavior of economic agents due to the economic and social context of the country.”(Sampaio, 2000:.47, translation)
- ¹⁵ *Ordem dos Técnicos oficiais de Contas* - denomination of the regulatory body of the profession.
- ¹⁶ Certified accountants or accounting technicians.
- ¹⁷ In an accounting office; In an accounting department; As a self employed; Other situations.
- ¹⁸ The authors do not know the existence of official data on the characteristics of accounting technicians.