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The Impact of Accounting Reforms in Financial Reporting- Case of Albania

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Abstract

In the line with Albania's membership in the European Union, as in many other countries, we have been implementing reforms in the accounting field, which have had an impact on financial reporting. These reforms have also affected the accounting profession. The establishment of a full set of National Accounting Standards (NAS) in accordance with IFRS was the main basis of these reforms. Through our study, following a review of the literature and focusing on the National Accounting Council's objective in updating national accounting standards in the context of harmonization with European Parliament Directive 2013/34 / EU (hereafter referred to as the "Directive"), we will highlight if this harmonization in itself is essential and effective for the economic unit, or it is simply an update. Based on the analysis of the primary data through the fuzzy logic analysis method, the effect of the accounting reform in the financial reporting will be studied by observing the relationship that may exist between these two indicators, as well as measuring the convergence level and making the difference between the adjusted NAS and the previous set of them.

Keywords: financial reporting, accounting standards, legal framework, formal harmonization, Measurement**.**

Introduction

What is being massively required by all countries is the creation of accounting practices and financial reporting that use a universal language. There are several factors that have encouraged and do still urge the process of a worldwide harmonization of financial reporting. Among others, the fast-paced development of information technology, has led to the ease of electronic movement of funds beyond national borders and has increased the readiness of the investors to invest within these borders. One reflection of the movement towards the international harmonization of financial reporting is the spread of International Financial Reporting Standards usage worldwide. In this context the improvement and reform making in the accounting area is aimed to increase the level of transparency and reliability of the financial information, as well as to fulfill the needs of market and protect the interests of the public and the state in the best way possible. In Albania the choice to use International Financial Reporting Standards does in line with the conditions of our economy, the goals set to bring our legislation closer with European Union member countries and by keeping in consideration the national accounting practices and traditions. The economic and social environment, the level of development and the ways in which the economy is organized have increased step by step the need to improve accounting standards. These improvements in general have ameliorated accounting and the accounting information system of businesses. The continuous evolving provided several information for its users, among which the primary basis of gaining information is the full set of financial statements that aim to give true and fair information regarding the activity developed by the company. These efforts have made possible the approval of Law no. 9228 on 29.04.2004 “For accounting and Financial Statements” that abolished Law no. 7661 on 19.01.1993 “For accounting”. This law predicted the creation of the National Accounting Council as a public and independent professional establishment that designs National Accounting Standards. This follows article 100 of the

Constitution and articles 20 and 24 of Law no. 9228 on 29.04.2004 "For accounting and Financial Statements" that states this major goals:

The continuous perfection of accounting legislation

The processing of the accounting system in accordance with the Law for Accounting

Designing National Accounting Standards

The urge to use NAS and IFRS.

Financial Statements in Albania from the 1st of January 2008 to present are prepared according to the requirements of this new Law no.9228 "For accounting and financial statements" that has been modified several times until nowadays. Not only because they were firstly prepared based on a set of 14 national accounting standards, that were designed in line with national accounting standards and are to be used by all profitable private and public enterprises since January 1st 2008 with the exception of those large companies that will be included in an approved list by the Council of Ministers and will fully apply international accounting standards. Then, due to further economic development and adjustments made in the area of accounting, there was another standard added to the set of 14 standards, The national Standard no. 15 "On accounting and financial reporting principles applied on micro enterprises" that was implemented from January 1st 2009 that was obviously in accordance with the IFRS published by IBFR, (IFRS for SMEs).

Another novelty of the reforms undertaken in Albania was the creation of NAS for Non Profit Organizations, which was made possible by the adoption of 14 NAS as required for the issues related to NGOs. It began its implementation on January 1st 2016. Applying the NAS represents a core change regarding the preparation and reporting of the financial statements. Although it has faced many obstacles, it represents an indispensable step in Albania's path towards the European Union. The reforms undertaken in the accounting area did not stop with the creation of the NAS or the Law for accounting but was enriched with further changes in other additional areas such as: practicing independent professions in accordance with Law no. 10091 on 05.03.2009 "*For legal auditing, management of the Accounting Expert Profession and certified accountant.*" which aims to improve and reinforce the public surveillance of the auditor's profession and for the certified accountants as well. Furthermore the accounting laws were followed by the legal adjustment of the cases related to it. On April 14th 2008 in support of the articles 78 and 83 point 1 of the Constitution, was approved Law no. 9901 "*For traders and trading companies*", that abolished Law no.7632 on 04.11.1992 "*For the general part of the Trade Code*" Law no. 7638 on 19.11.1992 "*For trading companies*" and Law no.7512 on 10.08.1991 "*For sanctioning and protecting private property, free incentives, independent activities and privatization*." Through this law many important reforms were undertaken, related to traders, establishing and managing trading companies, the rights and duties of the founding businessmen, their partners and shareholders, reorganization and liquidation of trading companies. This period's legislation established the foundations of accounting and market economy.

The reforms continued again, so in 2012, the National Accounting Council undertook the incentive to review and improve the full set of the NAS (a total of 15 standards) aiming to harmonize them with the requirements of the new standard for financial reporting in small and medium enterprises, published by IASB on July 2009. This reform was successfully completed in 2014 and the improved NAS in accordance with the Order of the Minister of Finance no.64 on 22.07.2014 "For the announcement of the improved National Accounting Standards and their mandatory implementation" are being applied since January 1st 2015. Once again the full set of the financial statements is composed by 14 applicable standards for SME one NAS for micro enterprises and one NAS for NGOs so a total of 16 national standards. The undertaken reforms have had several main goals:

-The improvement of the regulatory framework related to financial reporting

-The creation of stable structures to produce standards with high quality in the area of accounting and auditing.

-Creating monitoring and surveilling mechanisms that guarantee the application of standards in this area

-Increasing the professional level of accountants and auditors while preparing the financial statements and auditing reports.

Keeping in mind the aspiration to be part of the UE the Albanian government is approaching its legal and institutional framework with the EU's acquis communitaire.

In this context, the improvement of the responsibility and transparency in the field of financial reporting is an important goal. (Fino D. 2016)

Methodology

It is often stated that establishing national accounting standards must comply with IAS/IFRS. In this study will be elaborated the compliance of this final harmonization. Many studies related to harmonization have used the factorial analysis for the similarities between accounting practices in countries that follow the same rules (Doupnik 1987; Doupnik and Taylor 1985, McKinnon & Janell, 1984, Frank, 1979; Rahman, Perea, and Ganeshanandam 1996). Garrido, Leon, and Zorio 2002) presented an index in their study that provides the measurement of the harmonization of formal accounting in the course of time. Others have tried to indicate the level of accounting harmonization, by analyzing specific measurement methods applied by companies in Europe (Emenyonu & Gray, 1992, 1996; Herrmann & Thomas, 1995, 1996, Murphy, 2000; Van der Tas, 1988). In these studies the annual financial reports have been analyzed by companies with different residencies in order to define the level of the compliance between different accounting practices and the impact of adopting international standards in the process of accounting harmonization.

Even though several improvements are made in terms of measuring the harmonization and mainly the formal one, the core question of this study is applying the Euclidian distances. Being an absolute distance, the Euclidian distance can only indicate the differences between the compared cases/articles, but it cannot reflect the similarities or differences between them. This flaw makes it inappropriate to be applied while analyzing the formal harmonization (convergence) between different standards or the progress made within a standard (material harmonization).

Conscious about these existing flows Fontes et al. (2005) proposed the Jaccard coefficient and the Spearman coefficient in order to estimate the progress of formal harmonization between every two groups of accounting standards. They estimated the formal harmonization between the Portuguese accounting standards and IFRS in the three phases of accounting convergence, using the Euclidian distance, Jaccard coefficients and the Spearman coefficient.

Based on the analysis and estimation of the existing methods used to measure the level of harmonization (convergence) between every two groups of the accounting standards, in this study will be presented a method that fits the fuzzy clustering analysis (Qu X. & Zhang G. 2008). Firstly in 1965 Lotfi A. Zadeh published his work “Fuzzy Sets” that describes the mathematical theory of fuzzy clustering, where the fuzzy logics is expanded. This theory provided that the function on membership (or the true and false values) could be applied on a range of real numbers between [0.0, 1.0]. Through this it is evaluated the progress of national accounting standards convergence with IFRS. The essence of the fuzzy clustering analysis is to build the fuzzy matrix in accordance with the features of the object being studied. The classification is made according to a specific scale of membership based on the fuzzy matrix. If A is function of x that takes its values from [0, 1], A is considered a fuzzy set, and it’s marked:

$$A(\mathrm{x}) = \begin{cases} 1 & \mathrm{x} \in A \\ 0 & \mathrm{x} \notin A \end{cases}$$

The scales of membership are between a tight section [0, 1].

The procedures of the fuzzy clustering analysis applied in this study are as it follows:

Step 1: Choosing the indicators for the fuzzy clustering analysis $\mathrm{X}: \{\mathrm{x}_1, \mathrm{x}_2, \cdots, \mathrm{x}_n\}$ it is designed to represent general classified objects, where the characteristics of each object x_i are named by a group of data $(\mathrm{x}_{i1}, \mathrm{x}_{i2}, \cdots, \mathrm{x}_{im})$.

Step 2: Transforming the original data in the way that it eliminates the effects of different dimensions. The idea and the methods of transformation are the same being used in other fuzzy analysis for example in systematic clustering analysis that include standardization, classification and logarithmic etc.

Step 3: Calculating the fuzzy matrix of similarity. Calculating the statistical size $\mathrm{r}_{ij}(\mathrm{i}, \mathrm{j} = 1,2,\cdots,\mathrm{n})$

That represents the similarities between the classified objects. While ‘n’ is referred to the number of the classified objects.

$$\mathfrak{R} = \begin{bmatrix} r_{11} & r_{12} & \dots & r_{1n} \\ r_{21} & r_{22} & \dots & r_{2n} \\ \dots & \dots & \dots & \dots \\ r_{n1} & r_{n2} & \dots & r_{nn} \end{bmatrix} (3)$$

r_{ij} can be calculated by methods such as Euclidian distances, relator coefficients , Max-Min method, arithmetic mean, geometric mean, the absolute value index , mutual absolute values and the cosine method.

Step 4: If the fuzzy similarity relationship $\mathfrak{R}$ is also an equilibrium fuzzy relationship, the fuzzy clustering analysis can be elaborated directly. Otherwise, the fuzzy matrix of similarity must be remodeled into an equilibrium fuzzy matrix that will be analyzed by the following criteria:

Let's suppose that $\mathfrak{R}$ is a group in **X × Y**, if $\mathfrak{R}$ meet simultaneously the following pre-conditions:

(1) Reflexivity: $(x_i, x_j) \in \mathfrak{R}$; and

(2) Symmetry: if$(x, y) \in \mathfrak{R}$

Then $(x, y) \in \mathfrak{R}$, where $\mathfrak{R}$ has a fuzzy similarity relationship.

If$\mathfrak{R}$ fulfills the criteria (1) and (2), and also temporarily criteria (3):

(3) if $(x, y) \in \mathfrak{R}$ and$(y, z) \in \mathfrak{R}$, then$(x, z) \in \mathfrak{R}$

Where $\mathfrak{R}$ is in an equal fuzzy relationship then it is the case of equilibrium fuzzy matrix.

The definition of different **μ** to be part of the **$\mathfrak{R}$μ matrix**, giving thus a different scale of membership to the matrix, defines the kind of the group gained. If μ = 1, each case is a unique category. With the diminution of μ, the categories start to become closer and at last are merged into one.

Step 5: Designing the histogram (Clustering groups graphic).

This method was firstly used during the comparison of the first NAS set in Albania with IFRS where it was indicated that the full set of accounting standards was a novelty for Albania and it complies with the IAS/IFRS (Ujkani M, Dhamo S 2013)[1].

What this paper elaborates using the same mathematical method if the ongoing reforms led to the further improvement of NAS in accordance with IFRS-9 for SME do still represent a novelty ore just a simple necessity to fulfill the UE's requirements. In this context we came up with the hypothesis:

Hypothesis; *The Improved National Accounting Standards are a novelty and do fully comply with IFRS;*

The source of data that will serve to test the hypothesis will be the full set of the respective IAS and IFRS that are the basis of the NAS establishment in Albania. Furthermore, a more detailed analysis and methodology of hypothesis confirmation will be elaborated.

Literature Review

The European Union's strategy to continuously create and improve IAS/IFRS might offer new knowledge for enterprises that operate in different legal and accounting systems by approving a unique package of accounting standards. The presence of a unique package will provide that equal transactions have equal accounting treatment no matter where they happen. This will continue with the presentation of the financial statements on the same principles, accounting policies bringing a high quality and true information. However the improvement in changing the information of IAS/IFRS is conditioned by at least two factors:

Firstly: the improvement is based on the hope that the changes on IAS/IFRS represent a change on a GAAP that induces a higher quality financial reporting.

Secondly, the accounting system is a component of the general institutional system of the country and it is set even with incentives coming from the enterprises when it comes to financial reporting.

Based on this even the undertaken reforms in Albania in terms of accounting, have had the same focus. Some researchers for example Meeks (2002) are highly suspicious if an international accounting standard will produce a more comparable accounting worldwide. However, the changes in accounting practices through different countries might lead to similar transactions being registered differently in terms of financial reporting. This lack of comparability makes the international

[1] http://www.doktoratura.unitir.edu.al/wp-content/uploads/2014/01/Doktoratura-Mirela-Ujkani-Fakulteti-i-Ekonomise-Departamenti-i-Kontabilitetit.pdf.

financial analysis and investments even more complicated.Regardless how similar the accounting system are in different countries, they will not be easily comparable due to the big changes in the way the standards have been applied by companies due to differences in terms of economic, politic and cultural environment.

Adhikari and Tondkar (1992) have observed that *"Reporting, accounting and the standards for giving information as well as the practices are not developed in vain, but represent the specific environment in which they are developed"* (pg.76). Accounting principles and practices are generally affected not only by environmental factors such as values, history and culture but furthermore by the phase of the economic development of the society and the accounting system. There are different studies related to matters concerning the issues of accounting harmonization in Europe and its impact in the comparability and transparency of the financial statements. A study by Street and Shaughnessy (1998) has indicated that at the beginning of the 90's there were far more changes between international accounting standards among English-American countries.

In Albania on the study made by Ujkani M. and Dhamo S. in 2013, it was indicated that the creation of the full set of NAS was a novelty for the country and would provide an improvement in the quality of financial reporting in accordance with IFRS. The latest developments of the European Union offer a chance to investigate the impact of the rules set by the IAS/IFRS on the national accounting standards. The previous studies have investigated the cases related to the possible outcomes of the NAS regulation including the costs and possible problems related to the approval of IFRS (Stolowy and Jeny-Cazavan, 2001; Bradshaw and Miller, 2003; Cairns, 2003; Mazars, 2003; Haller & Eierle, 2004; Nobes & Parker, 2004; Street & Larson, 2004; Delvaille, Ebbers, & Saccon, 2005; Epstein & Mirza, 2006; etc.)

The accounting researchers indicate that IAASB is the main factor in the international harmonization of Accounting Standards. The compliance with IAASB is not mandatory and cannot be enforced to be applicable (Muller et al., 1991).

Now we are aware of the advantages that the process of harmonization and standardization gives, however these processes might be criticized.

Many studies have indicated that NAS are part of the national environment, which is different for any country. Among others, Wagenhofer, (2002) and Nobes (1994) think that the IAS are not compatible with the specific national environment. It is still uncertain if the IAS can elaborate differences that derive from different national backgrounds such as economic environments and traditions. This due to the fact that global standards are not equally involved in the national environment as the national ones and thus cannot react alike to national circumstances. Another declaration from Goeltz states that the global capital markets can be developed even without the IAS (Goeltz, Choi et al., 2002). Even though researchers agree with Goeltz, on the other hand they think that the need to comply or to prepare the financial statements according to the foreign accounting standards is an obstacle for the free competition of capital movement.

A major challenge for the IAASB is the need for a global applying in order to promote the equal application of IAS/IFRS. This requires that all the parts involved in this process (companies, auditors, governments, regulatory parts etc.) work together. We believe that it is firstly the process of harmonization (convergence) of Accounting Standards that will lead to a group of globally approved and unified accounting rules. Also all researchers must agree on a unique and high quality answer on accounting information.

To reach this goal, the preparers and users of the financial statements must be ready to accept that the process of harmonization of the accounting standards will include changes or reforms on all existing systems. Thus, an authentic and harmonized form of the international accounting system might create that business language that will provide comparing any accounting information from all countries.

Analysis and its indicated findings

Before starting the analysis and the indication of its findings firstly a brief methodology for testing the hypothesis will be described. According the theory of the fuzzy clustering here mentioned before, the general standards are categorized in a unique group. Each pair of the compared standards represents a group. Comparing the groups of standards based on 6 elements that include: the object of the area covered by the standard, the main definitions, the recognition criteria, the measurement criteria, the methods of measurement, and the measurement at the end of the period that are specific indicators (variables) of the cases. Based on a specific μ membership scale, the levels of the convergence standards are divided in four categories: It is set the coefficient *1 for cases that do completely converge, 0.7 for cases that do essentially converge, 0.3 for cases that do essentially not comply and 0 for the cases that are totally different.* These coefficients fit with each group and form the core data for the fuzzy clustering analysis.

In order to keep the same base of comparison and as the focus is on the National Accounting Standards and the expression of the indispensable need for them to represent a novelty, in this study it was followed the same structure while comparing NAS to IFRS. Thus the detailed steps for the calculation are followed as in the first evaluation of the convergence between NAS and IFRS (Ujkani M, Dhamo S 2013) as it follows.

Step 1: The definition of the case groups and their index specified in variables.

Firstly, it is required to set the goal of our calculations.

From the full set of the standards in this study are not included: Accounting standards no 1, no 15, and no. 16, being specific accounting standards. The core accounting standard no 1 in the set of NAS is equivalent with the Framework for Preparation and presentation of Financial Statements of IAASB. This is the conceptual basis to make specific accounting standards and that is why it is not part of the study and the comparison. NAS no 15 "On Accounting Principles and Financial Reporting from micro enterprises" and NAS no 16 "Accounting for NGOs" are not included to be compared with IFRS. These three standards are excluded so 13 standards are compared to IFRS and actual IAS, which will be referred as cases.

Secondly, it is necessary to define the pairs to be compared in each NAS and IFRS. For example 13 cases (NAS) are defined in a group and each of the cases of NAS is paired with the paragraphs of the respective IFRS on which they are based. It is stated as $\mathrm{S} = \{\mathrm{s}_1, \mathrm{s}_2, \cdots, \mathrm{s}13\}$ where s_i represent the "i" number of the standards' case, i = 1,2, ... 13.

In order to have a possible comparison, the compared articles of each part of the standards (functional indicator) 6 factors have been indicated based on the content of the standards. Those include: the object of the area covered by the standard, the terminology that is part of it, the recognition criteria, the measurement criteria, the methods of measurement, and the re-measurement at the end of the period. The requirements considering giving explanatory information that are quite different from the recognition criteria as well as the measurement, and that do not affect the accounting treatment and the comparison, but can improve the utility of the financial information.

All 6 factors of comparison are marked with $\mathrm{D} = \{\mathrm{d}_1, \mathrm{d}_2, \mathrm{d}_3, \mathrm{d}_4, \mathrm{d}_5, \mathrm{d}_6\}$. The feature of no j in the standard of no "i" can be indicated byx_{ij}, where i = 1,2, ... 13, and j = 1,2,3,4,5,6.

Step 2: The definition of the value for comparison cases in any unique case and the effects of the elimination coming from different dimensions.

It is set the value 1 for cases that do completely comply and 0.7 0.3 and 0 for cases that do essentially comply, do essentially not comply and are totally different. While comparing a unique case there might be several other sub-issues of comparison for which the same coefficients are used and are calculated in accordance with the definition of the compared sub-articles in order to evaluate any case of comparison and to eliminate the effects coming from different dimensions. The data for the 13 comparison cases and their compliance coefficients are stated in Table 1 (Annex). Based on Table 1 we ca use the method and the coefficient of compliance to calculate the overall level of convergence for 13 cases, that concludes that the overall level of convergence for NAS compared to IAS is

= $(163\times1+55\times0.7+11\times0.3+16\times0)$ / $(163+55+11+16)$ = **0.8359**

Step 3: Calculating the fuzzy matrix of similarity

In this study it is applied the method of Cosine similarity to calculate r_{ij}, and to build the fuzzy matrix of similarity: $R = \left| r_{ij} \right|_{n\times n}$ indicated in equation **(1).** (Table no 2 Annex)

Step 4: The elaboration of the R matrix to get a fuzzy matrix equivalent

After applying the method of Cosine similarity, the Max-Min method and the Max it is calculated the equilibrium fuzzy matrix. In this case, the second step (Max-Min method) has the same coefficient with the third step (Max method). So mathematically it can be stated: $\mathfrak{R} \circ \mathfrak{R}' \circ \mathfrak{R}'' = \mathfrak{R} \circ \mathfrak{R}'$. The equilibrium fuzzy matrix is stated in equation **(2)** (See Table 3 Annex)

Step 5: Clustering and technical design of fuzzy clustering

Different membership scales of **μ** are given to take different types of the **𝔑μ** groups.

According to the Histogram no. 1.1.it is indicated:

If μ = 1, each of the 13 cases is a unique category

$$\{S_2\}\cup\{S_3\}\cup\{S_4\}\cup\{S_5\}\cup\{S_6\}\cup\{S_7\}\cup\{S_8\}\cup\{S_9\}\cup\{S_{10}\}\cup\{S_{11}\}\cup\{S_{12}\}\cup\{S_{13}\}\cup\{S_{14}\}$$

If μ = 0.99, all 13 cases are categorized in 5 different categories, in which convergence is reached. No 2, 7, 8, 11, 12, 4, 5, 6, 14 represent a unique category while cases no.9, 10, 13, and 3, are categorized separately.

$$\{S_2, S_7, S_8, S_{11}, S_{12}, S_4, S_5, S_6, S_{14}\}\cup\{S_9\}\cup\{S_{10}\}\cup\{S_{13}\}\cup\{S_3\}.$$

If μ = 0.98, all 13 cases are categorized in 2 different categories. Cases no 2, 7, 8, 11, 12, 4, 5, 6, 14 and 9, 10, 13 are combined and merged in this category, while no. 3 is a unique category.

$$\{S_2, S_7, S_8, S_{11}, S_{12}, S_4, S_5, S_6, S_{14,}\ S_9, S_{10}\ S_{13}\}\cup\{S_3\}.$$

If μ = 0.97, all 13 categories are merged in a unique one.

$$\{S_2, S_7, S_8, S_{11}, S_{12}, S_4, S_5, S_6, S_{14,}\ S_9, S_{10}\ S_{13}, S_3\}.$$

Histogram 1.1 "For the convergence of the improved NAS with NAS/IFRS"

1	NAS2
	NAS7
	NAS8
	NAS11
	NAS12
0.99	NAS4
	NAS5
	NAS6
	NAS14
0.98	NAS9
	NAS10
	NAS13
0.97	NAS3

The results analysis based on the coefficient's calculation and the fuzzy clustering analysis, indicates that the full set of the improved NAS continue to have a quite notable convergence with all IAS/IFRS and IFRS for SME, on which they are based. The overall level of convergence between NAS and IFRS calculated with a compliance coefficient is 0,8359 thus greater than 0.7 which means that a notable convergence is achieved between NAS and IAS/IFRS. However, on the first study made (Ujkani M. and Dhamo S 2013) this level of convergence was defined 0.8377. This indicates the fact that the level of convergence based on compliance coefficients between the improved set and the first set of NAS shows no notable difference (it can be said that they stay on the same levels). Based on the fuzzy clustering analysis the lowest membership scale of μ is set on the level of 0.97, because on this level all the cases were able to be categorized in one. So it results that the smallest step of the membership scale is 0.01 and the biggest step of the membership scale is 0.03 the case of μ = 1, and it defines the fact that each case is a unique category and when μ = 0.97 all the cases are categorized as one. This also means that the level of convergence between the improved NAS and IAS/IFRS and IFRS for SME is much higher and NAS have converged.The very small interval of the membership scale indicates small differences between the convergence of any case of the NAS and IAS/IFRS. While based on the previous study made by Ujkani M and Dhamo S 2013 it is stated that the membership scale is lower than μ on a level of 0.96 and that the smallest step of the membership scale is 0.01 and the biggest step of the membership scale is 0.04. Once again, the comparison between the two phases, the phase when the first set of NAS was created and the phases of the reforms that continued the improvement of NAS indicates a quite small difference (0.97 ÷ 0.96).

This analysis **rejects** this study's hypothesis that "*The improved NAS are a novelty and in full compliance with IFRS*" So based on the fuzzy clustering analysis it is indicated that the improved set of NAS has almost the same convergence levels and μ membership scale levels as it follows:

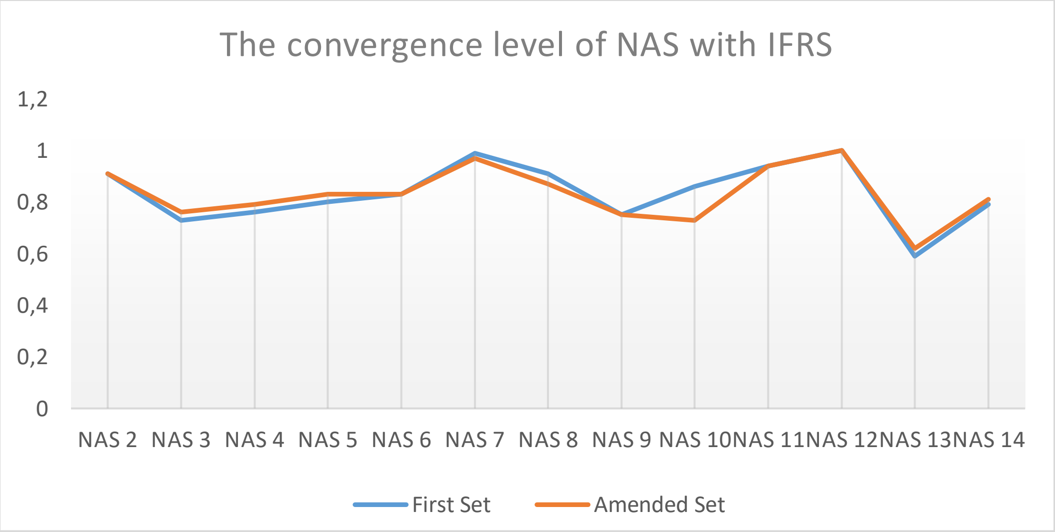
Overall level of convergenceMembership scale

The first set of NAS1 > **0.8377** > 0.7**0.96**

The improved set1 > **0.8359** > 0.7**0.97**

However the analysis continues, focusing on the elaboration of these changes between the two sets and the overall level of convergence as well as evidencing the determinative factors of these differences. The data is shown graphically on Graphic 1 (see Annex 4)

Graphic no 1 "Comparison of the level of convergence of first and improved NAS"



Source: Authors based on this study's data and the study made on 2013

From the graphic and the comparison of the coefficients' data it is concluded that NAS no. 2, 6, 9, 11, 12, all have the same compliance coefficients in their creation fazes as well as during further improvement. This result tells that the reforms undertaken in order to improve these standards have no effects in their level of convergence continue to be the same, and it can be surely stated that it refers only to a compliance of the IFRS elements and to fully converge. NAS no 3, 4, 5, 7, 8, 10, 13 and 14 do have changes on their level of convergence. These changes might be divided in two categories- the category where reforms related to their improvement have had an impact on increasing their level of convergence that includes NAS 3, 4, 5, 13 and 14. These reforms are related to the accounting treatment of financial instruments, inventories, long term tangible and intangible assets, biological assets and controlled companies as well as participations, Some specific topics that may be included and that represent a novelty for NAS are the evidencing of the way concessionary agreements are treated (NAS 13) considering that may activities of this type are being developed in Albania. The other category NAS 7, 8, 10 includes those standards that the reforms for their improvement have given a lower convergence level compared to the first set created in these areas. This includes the accounting treatment of revenues, leasing and government grants. The most visible effects of these reforms are related to the evidencing in the respective NAS of the accounting treatment of the revenues generated from construction contracts, revenues from ordinary rent and leasing and indicating the forgivable debts that according to the NAS are to be treated as a grant only in the cases when there is sufficient assurance that the enterprise will fulfill the predestined conditions to forgive the debt. These changes in NAS emphasize that Albania in its respective reforms aims not only to comply with IFRS but also with the country's development conditions.

5. Conclusions

Albania's choice to apply National Financial Reporting Standards meets the necessities and conditions of its economy, the goals of bringing its legislation closer to the legislation of European Union member countries and is in line with the national accounting practice. The socio-economic conditions, the level of development and the way the economy is organized have urged the need and will continue to step up the need for reforms in the accounting field.

Based on the fuzzy clustering analysis this paper concludes that the improved NAS have reached their goal of sufficient convergence with all IFRS and IFRS for SME. The overall level of convergence between NAS and IFRS is calculated with a 0.8357 compliance coefficient, thus greater than 0.7 which means that a quite important convergence between NAS and IFRS has been achieved. On the other hand the lowest membership scale is set on the level of 0.97. These do not represent a novelty in the first set of NAS but represent an effort of Albania towards the improvement of responsibility and transparency the area of financial reporting, as a major goal to join the UE. These changes underline the fact that Albania in these particular reforms aims not only compliance with IFRS but also with the country's conditions.

The official convergence measurement of accounting standards through fuzzy clustering analysis is still on an exploratory faze. Due to the fact that it still includes personal judgements in solving of the cases compared and in the determination of the values, it is to be considered that there might be one-sided thoughts among researchers and readers.

However, it is hoped that this study gives a contribution in studying the measurement of formal harmonization and gives the chance for others to do further research in this area.

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ANNEX

Table no 1. "Measurement of convergence coefficients for 13 NASs with IFRS / IFRS for SMEs"

NAS / IAS	Coefficients	Scope		Terminologies		Recognition		Measurement		Accounting methods		Re-measurement		Measurement coefficient
NAS 2 "Presentation of financial statements" /IFRS for SME (17 cases)	1	1	1.00	2	1.00	2	0.79	5	1.00	2	1.00	0	1.00	0.912
	0.7	0		0		5		0		0		0		
	0.3	0		0		0		0		0		0		
	0	0		0		0		0		0		0		
NAS 3 "Financial instruments " / IAS 32, IAS 39 and IFRS for SME (23 cases)	1	0	0.70	3	0.93	4	1.00	0	0.70	3	1.00	4	0.50	0.761
	0.7	1		1		0		3		0		0		
	0.3	0		0		0		0		0		0		
	0	0		0		0		0		0		4		
NAS 4"Inventories" / IAS 2 and IFS for SME (19 cases)	1	0	0.70	2	0.90	2	1.00	3	0.93	3	0.60	2	0.75	0.795
	0.7	1		1		0		1		0		1		
	0.3	0		0		0		0		0		1		
	0	0		0		0		0		2		0		
NAS 5 "AAM dhe AAJM" / IAS 16, IAS 38, IAS 36,IAS 23,	1	1	1.00	6	1.00	4	0.87	3	0.66	0	0.70	3	0.83	0.829
	0.7	0		0		3		0		5		0		
	0.3	0		0		0		1		0		1		
	0	0		0		0		1		0		0		

IFRS 5 and IFRS for SME (28 cases)														
NAS 6 "Provisions, liabilities and contingent assets " / IAS 37 and IFRS for SME (21 cases)	1	1	1.00	5	1.00	3	0.88	2	0.62	2	0.77	1	1.00	0.829
	0.7	0		0		2		2		0		0		
	0.3	0		0		0		1		1		0		
	0	0		0		0		1		0		0		
NAS 7 "Accounting for leases" / IAS 17 and IFRS for SME (22 cases)	1	1	1.00	8	0.97	1	1.00	6	0.96	3	1.00	1	1.00	0.973
	0.7	0		1		0		1		0		0		
	0.3	0		0		0		0		0		0		
	0	0		0		0		0		0		0		
NAS 8 "The income" / IAS 18, IAS 11 and IFRS for SME (21 cases)	1	1	1.00	0	0.70	2	0.90	3	0.93	5	0.91	1	1.00	0.871
	0.7	0		5		1		1		2		0		
	0.3	0		0		0		0		0		0		
	0	0		0		0		0		0		0		

(continues)

NAS / IAS	Coefficients		Scope	Terminologies		Recognition		Measurement		Accounting methods		Re-measurement		Measurement coefficient
NAS 9 "Consolidation " / IFRS 3 and IFRS for SME (15 cases)	1	1	1.00	2	1.00	2	1.00	3	0.66	1	0.50	0	1.00	0.753
	0.7	0		0		0		2		0		0		
	0.3	0		0		0		3		0		0		
	0	0		0		0		0		1		0		
NAS 10 "Grants and other forms of aid" / IAS 20 and IFRS for SME (12 cases)	1	0	0.70	0	0.47	1	0.65	2	0.77	2	1.00	1	1.00	0.725
	0.7	1		2		0		0		0		0		
	0.3	0		0		1		1		0		0		
	0	0		1		0		0		0		0		
NAS 11 "Profit tax" / IAS 12 (19 cases)	1	1	1.00	2	0.85	6	0.93	4	1.00	1	1.00	1	1.00	0.937
	0.7	0		2		2		0		0		0		
	0.3	0		0		0		0		0		0		
	0	0		0		0		0		0		0		

NAS 12 " The effect of exchange rate changes" / IAS 21 and IFRS for SME (16 cases)	1	1		4		4		3		3		1		
	0.7	0		0		0		0		0		0		
	0.3	0		0		0		0		0		0		
	0	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	0	1.00	1.000
NAS 13 " Biological Assets and Concession Agreements " / IAS 41 and IFRS SME (17 cases)	1	0		3		1		1		1		1		
	0.7	1		1		1		1		1		0		
	0.3	0		0		0		0		0		0		
	0	0	0.70	0	0.93	0	0.85	1	0.57	3	0.34	1	0.50	0.618
NAS 14 " Accounting treatment of controlled companies and participations" / IAS 27, IAS 28, IAS 21IAS 7 and IFRS for SME (15 cases)	1	1		4		1		1		1		1		
	0.7	0		0		1		1		1		1		
	0.3	0		0		1		0		0		0		
	0	0	1.00	0	1.00	1	0.50	0	0.85	0	0.85	0	0.85	0.807

Table no 2 "Fuzzy matrix of similarity to NAS - IAS / IFRS (Matrix $\mathfrak{R}$)"

1	0.97	0.99	0.99	0.99	1.00	1.00	0.98	0.98	1.00	1.00	0.98	0.99
0.97	1	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
0.99	0.97	1	0.99	0.99	0.99	0.99	0.98	0.98	0.99	0.99	0.98	0.98
0.99	0.97	0.99	1	1.00	0.99	0.99	0.99	0.98	0.99	0.99	0.98	0.98
0.99	0.97	0.99	1.00	1	0.99	0.99	0.99	0.98	0.99	0.99	0.98	0.98
1.00	0.97	0.99	0.99	0.99	1	1.00	0.99	0.98	1.00	1.00	0.98	0.99

1.00	0.97	0.99	0.99	0.99	1.00	1	0.98	0.98	1.00	1.00	0.98	0.99
0.98	0.97	0.98	0.99	0.99	0.99	0.98	1	0.97	0.98	0.99	0.98	0.98
0.98	0.97	0.98	0.98	0.98	0.98	0.98	0.97	1	0.98	0.98	0.95	0.98
1.00	0.97	0.99	0.99	0.99	1.00	1.00	0.98	0.98	1	1.00	0.98	0.99
1.00	0.97	0.99	0.99	0.99	1.00	1.00	0.99	0.98	1.00	1	0.98	0.99
0.98	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.95	0.98	0.98	1	0.98
0.99	0.97	0.98	0.98	0.98	0.99	0.99	0.98	0.98	0.99	0.99	0.98	1

Table no 3 "Fuzzy matrix of balance for NAS - IAS / IFRS(Matrica $\mathfrak{R}$')"

1	0.97	0.99	0.99	0.99	1.00	1.00	0.98	0.98	1.00	1.00	0.98	0.99
0.97	1	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
0.99	0.97	1	0.99	0.99	0.99	0.99	0.98	0.98	0.99	0.99	0.98	0.98
0.99	0.97	0.99	1	1.00	0.99	0.99	0.99	0.98	0.99	0.99	0.98	0.98
0.99	0.97	0.99	1.00	1	0.99	0.99	0.99	0.98	0.99	0.99	0.98	0.98
1.00	0.97	0.99	0.99	0.99	1	1.00	0.99	0.98	1.00	1.00	0.98	0.99
1.00	0.97	0.99	0.99	0.99	1.00	1	0.98	0.98	1.00	1.00	0.98	0.99
0.98	0.97	0.98	0.99	0.99	0.99	0.98	1	0.97	0.98	0.99	0.98	0.98
0.98	0.97	0.98	0.98	0.98	0.98	0.98	0.97	1	0.98	0.98	0.95	0.98
1.00	0.97	0.99	0.99	0.99	1.00	1.00	0.98	0.98	1	1.00	0.98	0.99
1.00	0.97	0.99	0.99	0.99	1.00	1.00	0.99	0.98	1.00	1	0.98	0.99
0.98	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.95	0.98	0.98	1	0.98
0.99	0.97	0.98	0.98	0.98	0.99	0.99	0.98	0.98	0.99	0.99	0.98	1

Histogram 1.2 "For the Convergence of First NASs with IAS / IFRSs"

1	**NAS 2**	"Presentation of financial statements"
2	**NAS 7**	"Accounting for leases"
3	**NAS 8**	"The income"
4	**NAS 11**	"Profit tax"
5	**NAS 12**	"The effect of exchange rate changes"
6	**NAS 6**	"Provisions, liabilities and contingent assets"
7	**NAS 10**	"Grants and other forms of aid"
8	**NAS 14**	"Accounting treatment of controlled companies and participations"
9	**NAS 4**	"Inventories"
10	**NAS 5**	"AAM dhe AAJM"
11	**NAS 9**	"Consolidation"
12	**NAS 13**	"Biological Assets"
13	**NAS 3**	"Financial Instruments"

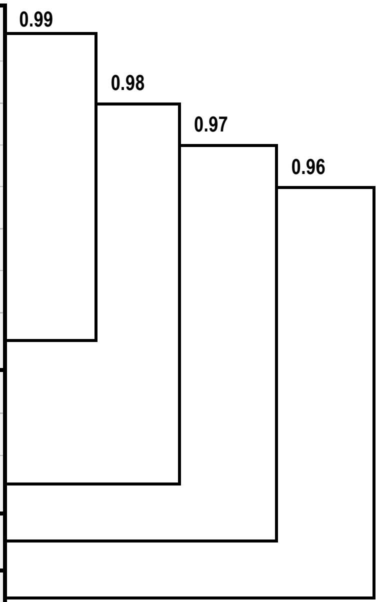

Table no. 4 "Convergence measurement coefficients for the first and improved NAS Set"

	Measurement coefficient		
NAS / IFRS	**First Set**	**Amended Set**	**Differences**
NAS 2	0.91	0.91	0
NAS 3	0.73	0.76	0.03
NAS 4	0.76	0.79	0.03
NAS 5	0.79	0.83	0.04
NAS 6	0.83	0.83	0
NAS 7	0.99	0.97	-0.02
NAS 8	0.91	0.87	-0.04
NAS 9	0.75	0.75	0
NAS 10	0.86	0.73	-0.13
NAS 11	0.94	0.94	0
NAS 12	1	1	0
NAS 13	0.59	0.62	0.03
NAS 14	0.79	0.81	0.02