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Full Length Research Paper

Development of market opportunities through post-harvest processing of the African indigenous vegetables in Tanzania

Richard Musebe^{1*}, Daniel Karanja¹, Srinivasulu Rajendran², Radegunda Kessy²,
Monica Kansime¹, Damas Marandu³, Silivesta Samali³, Jacqueline Nicodemus⁴,
Ngoni Nenguwo², Ruth Chiwanga⁴ and Peter Makuya⁴

¹Centre for Agriculture and Biosciences International (CABI) Africa, P. O. Box 633-00621 Nairobi, Kenya.

²World Vegetable Center, Duluti, P. O. Box 10 Arusha, Tanzania.

³Horticultural Research and Training Institute (HORTI) Tengeru P. O. BOX 1253, Arusha, Tanzania.

⁴INADES Formation, P. O. Box 203 Dodoma, Tanzania.

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African indigenous vegetables (AIVs) have gained prominence in the recent past due to nutritional and health benefits. The low requirement for high value inputs has enabled low resource farmers to practice AIVs production. There have been improvements in the production of high quality AIVs seeds as well as more production of the AIVs leaf and fruits. As a consequence, there are occasional gluts of the AIVs leaf and fruit especially during the main production season. This study examined the challenges associated with production of processed AIVs and possible market opportunities using data from 10 AIVs processing groups and 21 key informants that were purposively selected. Data were analysed using descriptive statistics and thematic analysis. It was established that processors did not have the necessary skills, knowledge and training required for processing of AIVs in more economically attractive ways. There was no diversity in the processing methods and processed products. Types and sources of packaging materials were restricted in various respects. Processors did not have special storage facilities for the AIVs. The share of processed AIVs in the total consumption of the vegetables was 25%. Sixty percent of those interviewed stated that the demand for all types of processed AIVs was increasing. Many institutions were supporting processing of AIVs. Quality of processed AIVs was perceived to be same as that of the fresh AIVs. Consumers were willing to pay more money for better quality processed AIVs. In order to increase sales of processed AIVs there should be informal agreements, partnerships or contracts depending on the degree of relationship between processors and consumers to guarantee target markets. Tanzania Bureau of Standard (TBS) and Tanzania Food and Drugs Authority (TFDA) need to create awareness regarding the specific quality requirements for processed AIVs. Training should be provided on different processing methods and the range of products that could be produced for different consumers. There should be financial support and/or linking of processors with the different credit institutions. It is necessary to provide processing infrastructure and training on marketing of the processed products. Specific requirements for the premises, processing rooms and standards should be explained to the processors to assure the requisite quality. Product branding has to be undertaken especially at two levels, which are indicating the key attributes of AIVs on the packages and certification by TBS and TFDA as well as having their labels on the containers of the packed products.

Key words: Vegetables, processors, quality, storage, demand, target markets.

INTRODUCTION

African indigenous vegetables (AIVs) have gained prominence in the recent past (Abukutsa-Onyango et al., 2006). Among the key reasons for this have been the recently documented nutritional and health benefits (Lotter et al., 2014). The low requirement for high value inputs has been one other reason, which has enabled low resource farmers to practice AIVs production (Rajendran et al., 2015).

Previous studies indicate limited access to high quality seeds (Karanja et al., 2014). This was addressed by CABI, World Vegetable Center, HORTI-Tengeru and other collaborators. Several approaches have since enabled the growers to have access to good quality seed. Contract farming, research mediated approaches and quality declared seed are the key mechanisms that now facilitate farmer access to improved seeds of AIVs (Rajendran et al., 2016). Production practices have also been improved through facilitation by the extension officers of different government entities and other organizations.

These endeavours have led to improvements in the production of high quality AIVs seeds as well as more production of the AIVs leaf and fruits for the consumers. Following on these have been situations where there were occasional gluts of the AIVs leaf and fruit especially during the main season of production (that is the rain season). In some instance there have been good sales of the fresh AIVs by the producers but sometimes there are wastages. AIVs are perishable and have high price fluctuations, which makes them risky to produce. One key opportunity to avoid unnecessary losses is by increasing the shelf life of the AIVs through processing.

Habwe et al. (2008) argue that the purpose of traditional food processing is preservation to maintain a supply of wholesome, nutritious food during the year and especially for the time of scarcity. Such an approach would expand the market opportunities for the AIVs.

This is because it would be possible to store for relatively longer than in the case of fresh vegetables and sell at prices that allow adequate profits for continuity of the business, and also during times of limited supply. The expectation is that the existing and prospective processors would upgrade their production processes or diversify their product range in order to reach new markets.

Processed AIVs are important cash crops that can be produced in small amounts by the small scale traders (Okado, 2000). These could also work as part of the commercialization of the smallholder AIVs farms. It could also help the farmers to diversify their agriculture and

increase cash incomes. Based on the foregoing, a few groups were trained on vegetable processing in Arusha and Dodoma Regions of Tanzania. The intention was to assure sustainability in production of fresh and processed AIVs.

Success indicators in this endeavour have not been isolated hence the need to examine the possible market opportunities and challenges associated with processing of the AIVs. This study addressed these issues by achieving two objectives which were;

1. To examine AIVs processing scenario and
2. To identify and document challenges and opportunities for trained vegetable processing groups.

LITERATURE REVIEW

AIVs have been part of the food systems in sub-Saharan Africa for generations (Gilbert et al., 2011). AIVs have gained prominence in the recent past due to consumer appreciation of their health and nutritional benefits (Lotter et al., 2014; Takemore et al., 2014; Abukutsa-Onyango et al., 2006).

Attitudes about AIVs consumption have also changed and as a consequence there are increases in quantities consumed by the different categories of consumers (ESRF, 2010; Shazia et al., 2007). Activities and efforts to promote the production and consumption of AIVs have as result been undertaken by different stakeholders (Rajendran et al., 2015; Rajendran et al., 2016; Karanja et al., 2011; Shiundu and Oniang'o, 2007). These efforts have been accompanied by increases in production of AIVs. However, most farmers depend on rain fed farming and all harvest at the same time. This results in overproduction and difficulties to sell all produce and as a consequence a lot of the produce rots (Marg et al., 2008; Edmond et al., 2008).

Vegetables are highly perishable; they start to lose their quality right after harvest and continue throughout the process until it is consumed. This poses major challenges in distribution and marketing. For this purpose elaborate and extensive marketing channels, facilities and equipment are vital. This behaviour of vegetables makes the commodity not to be held for long periods and fresh produce from one area is often sent to distant markets without a firm buyer or price (Osano, 2010).

According to Putter et al. (2007) another dynamic of fresh fruit and vegetable sub-sector in Tanzania are spot markets whereby it is estimated that 80% of the produced vegetables in Tanzania is sold by the farmers at farm gate to commissioners.

*Corresponding author. E-mail: r.musebe@cabi.org.

Moreover, the traditional supply chains in the fresh fruit and vegetable sector are long, involving an array of many subsequent stages and actors, un-coordinated flow of produce, no transparency and generating very small margins per actors. In this market environment farmers are in a disadvantaged position, lacking assets (social capital, financial capital, human capital) to improve their positioning (Marg et al., 2008).

Given these scenarios it is important for measures to be taken that address market gluts, wastage and the associated output and income losses. Suffice to note that selling agricultural products is the main source of cash income for most rural household's farmers in Tanzania. Farmers are no longer not only interested in high yield or even in high prices per se, but in more remunerative marketing outlets (Scott, 1995).

Developing marketing opportunities is a key success factor that can facilitate the production of AIVs. Processing is vital to unlock AIVs marketing barriers, minimize losses and to assure availability of AIVs throughout the year (Van den Berge et al., 2005).

Takemore et al. (2014) reported that processing is lacking in AIVs vegetable marketing chains and therefore the high perishability of traditional vegetables poses major challenges for marketing and distribution. Hence, improvement of packaging and processing standards is an important step for increased competitiveness of AIVs vegetables products along the entire value chain (Takemore et al., 2014).

Food processing which is preservation of food is an important manufacturing step that is used to provide food safety, maintain quality, extend shelf-life and prevent spoilage (Wiley, 1994; Shazia et al., 2007). Other purposes of traditional food processing are to maintain a supply of wholesome, nutritious food during the year, preservation for the time of scarcity and generate wealth for the producer and seller (Habwe et al., 2008).

Wiley (1994) argue that preserving foods could be reduced to two principal methods, "one in which desiccation is employed and the other in which more or less of a characteristic foreign substance is added to prevent fermentation and putrefaction". Other processing methods include canning, thermal and heat processing. Wiley (1994) did not extend use of the identified processing methods by creating the requisite linkages for processed products to generate more returns.

This study addressed the omission by indicating a need for the formation of effective and functional groups for processing and collective marketing as well as linkages with different AIVs value chain stakeholders. Part of this approach is shared by Ngugi et al. (2007) who advocates for formation of groups albeit at the producer level.

Osano (2010) argued that identifying different actors and roles played along the market chain would assist institutions in formulation of policy intervention that may stimulate smallholders' farmers' profitability in AIV marketing. Institutions such as non-governmental

organisations (NGOs) or cooperatives were to be established to promote farmers to work together in order to have a strong voice and unity as they need to negotiate for favourable prices for their produce. Our study builds on this recommendation by establishing methods for growth of processing groups and linkages necessary for improved processing efficiency that would assure trust among consumers.

A study conducted by Marg et al. (2008) reported two value chains for fresh vegetables. That is institutional marketing and collective marketing. This study is based on integration of the two chains led by the second value chain that presupposes capacity building for effective operation of the groups. This is because group action can generate economies of scale and improve bargaining power of the participants. This study stresses the need for information sharing especially from regulatory authorities for enforcement of quality standards amongst the processors for collective marketing. In this quest it identified institutions and stakeholders in African indigenous vegetables, and their expected roles to facilitate profitable processing.

Ngugi et al. (2007) reported that the factors attributed to successful participation of the farmers/groups in the dynamic markets include good governance; an ingrained culture of farming; commitment; access to technical advice; integration into necessary support services; regular and predictable incomes; transparency and accountability; support and backstopping by a an agency.

This study encapsulates these views by indicating the need for training and priority key training needs for effective marketing of AIVs. It is appreciated that farmers need to be continuously trained on the new requirements or standards of the high value dynamic markets. Further the role to be played by different stakeholder in AIVs marketing chain is underscored.

A study conducted by Gilbert et al. (2011) established that profitability of AIVs enterprises was hampered by lack of transport, exploitation by middlemen and lack of market information. In an effort to address these weaknesses producer groups were linked to both formal and informal markets through designed marketing models relevant to all value chain players.

However, the issue of seasonal gluts in the markets was not addressed. This study moves a step higher by identifying opportunities that arise from all year round access to markets and AIVs. In addition, propositions are made for the use of group transportation by AIVs processing partners.

In a study conducted on leafy vegetables in Ghana by Vivian et al. (2016), marketing of leafy vegetables was found to be inefficient although benefit-cost ratios showed that it was profitable. To remedy this anomaly, the study recommended that farmers and traders should form co-operatives to enable them bargain for prices, obtain loans and purchase storage facilities as groups. The study further noted that the fundamental problems of



Figure 1. Map of Tanzania showing the study regions of Arusha and Dodoma (Source: https://en.wikipedia.org/wiki/Regions_of_Tanzania)

perishability among traders had to be addressed. However, no specific solutions for perishability and market gluts were adequately addressed. This study provides explicit measures to address perishability and linkage to market opportunities.

METHODOLOGY

This study was conducted in Arusha and Dodoma Regions of Tanzania, which were the key areas that were identified for promotion of contract and quality declared seed production of the AIVs (Figure 1). The study was undertaken in May and June 2015 in specific locations in Arusha and Dodoma Regions that were considered critical for the production of AIVs.

Purposive sampling was used to select 21 key informants (KIs) and 10 groups of farmers involved in processing AIVs. The key informants were selected based on experience, knowledge and extensive involvement in processing of agricultural products, especially vegetables. The KIs were categorised according to the institutions they belonged to.

At least one respondent was selected from each of the institutions to provide expert information. The key informants were categorized as follows:

Researchers and academicians: World Vegetable Center, Nelson Mandela University, HORTI-Tengeru and Selian Agricultural Research Institute (SARI). Government and Regulatory bodies: Ministry of Agriculture, Food Security and Cooperatives (MAFSC (Dept. of food processing, Agricultural Extension Officers, District

Subject Matter Specialists), Tanzania Food and Drugs Authority (TFDA), Small Industry Development Organization (SIDO), Market Infrastructure, Value Addition And Rural Finance (MIVAF) and Centre for Agriculture Mechanization and Rural Technology (CAMARTEC). SIDO supports small scale processors. MIVAF is a World Bank funded project supporting infrastructure development. NGOs: Oikos, INADES Formation and FARM CONCERN International Centres. Associations: Tanzania Horticultural Association (TAHA). TAHA supports exporters and private sector involved in processing.

In addition, it supports the whole horticulture sector in general. MED Foods (a local processing company) and AFRILISHE Company were also selected to participate in the study. Ten farmers' groups involved in processing were selected to participate in focus group discussions (FGDs). These groups were distributed equally between Arusha and Dodoma Regions (Table 1).

Arusha Region included Arusha and Moshi Districts while Dodoma Region covered the larger Dodoma District. Data collected from the FGDs included types of AIVs processed, quantities processed and processing methods, reasons for the selected methods, challenges encountered, storage and marketing of the AIVs.

RESULTS AND DISCUSSION

Types of AIVs processed and methods used

Many types of AIVs were grown in the study regions.

Table 1. Names of the groups involved in the FGDs.

Name of the group	Location (District/Region)	No. of FGD participants
Alnjavutian Group (in Sokoni One area)	Arusha	12
Arusha Widows	Arusha	15
Kilimanjaro Natural Food Cooperatives	Moshi	17
Ndefoni	Arusha	13
UMANGO women group (under WODSTA)	Arusha	15
Azimio group	Dodoma	11
Jikomboe Handcraft Group (Ukunjali)	Dodoma	16
Onjama	Dodoma	14
Tumaini Group	Dodoma	11
Tumaini Jitegemee Group	Dodoma	16

Source: Survey data (2015).

Table 2. Magnitude of processing different AIVs (%).

Major AIVs processed	Percentage (%)
Amaranthus	20.0
Cassava leaves	20.0
Cowpea leaves	30.0
Ethiopian mustard	10.0
Jute mallow	10.0
Night shade	10.0

Source: Survey data (2015).

Table 3. Processing methods as reported by the groups (%).

Processing method	Percentage (%)
Blanching and Solar drying	10.0
Solar drying	40.0
Sun drying	50.0

Source: Survey data (2015).

They include African nightshade (*Solanum scabrum*), spider plant (*Cleome gynandra*), vegetable amaranth (*Amaranthus hybridus*), slenderleaf (*Crotalaria brevidens*), jutemallow (*Corchorus olitorius*), cassava leaves (*Manihot esculenta*) vegetable cowpea (*Vigna unguiculata*) pumpkin leaves (*Curcubita muschata*), African kale (*Brassica carinata*) and Ethiopian Mustard (*Brassica carinata*) (Abukutsa-Onyango et al., 2006).

Those that were processed to a greater extent were cowpea leaves, amaranthus and cassava leaves (Table 2). This is because they were more readily available and farmers preferred being involved in production of these types of AIVs. Farmers grow cowpea as intercrops with their main food crop maize and hence don't have to allocate a different land and labour for its production.

Cowpea is also dual purpose because farmers can consume the fresh vegetable and keep the crop for grain production. Amaranthus were preferred over AIVs because processors perceived them to be more profitable. This finding is consistent with results of Lotter et al. (2014) who established that amaranthus were more profitable than AIVs (Table 2).

Processing and preservation treatments lead to high convenience and nutritional value which is advantageous to consumers and food services (Wiley, 1994). Three main processing methods were used but sun drying was the most preferred processing method (Table 3).

Sun drying was preferred because of less energy requirement as well as its low demand for equipment/infrastructure to use. Sun drying was undertaken after harvesting and cleaning by drying the AIVs directly in the sun. In special circumstances, the AIVs were harvested cleaned (washed), sorted and boiled for a few min using low heat and thereafter sundried.

In this case, the AIVs were wrapped in a piece of cloth and dipped in boiled water as indicated earlier then they were removed and dried in the sun for 2 to 3 days. There was no specified time for boiling but some group members reported 3 min.

Solar drying was also done after cleaning the AIVs. Using this method, the AIVs were not exposed to direct sunlight but were placed in solar driers. Different reasons were given for the selection of the processing methods. The main reason for selection of the technology was that the group members were familiar with the technology (Table 4). Selection of the technology also indicates that there was limited access to other alternative options. This is ideally depicted in the types of technologies that were used for processing.

Studies have established that solar drying retained more of the nutrients than sun drying and could be a better method of processing because it is relatively hygienic with reduced microbial load compared to sun drying (Ukegbu and Okereke, 2013).

Table 4. Reasons for choice of processing approaches (%).

Reason for the method used	Percentage (%)
Cultural practice	20.0
Easily available and easy to use	10.0
Easy to use and is also cheap	10.0
It is easiest to use and safe	20.0
It is the available technology and is known	10.0
The technology is familiar to the group members	30.0

Source: Survey data (2015).

Table 5. Quantities of the different AIVs processed per year (kg)

Type of AIV	No. of groups involved	Mean	Total
Amaranthus	2	85.0	170.0
Cassava leaves	2	17.5	35.0
Cowpea leaves	3	70.0	210.0
Jute mallow	2	10.0	20.0
Night shade	1	40.0	40.0

Source: Survey data (2015).

In addition, solar drying of vegetables facilitates micronutrients retention and product diversification to enhance accessibility of nutrients for improved health through micronutrients supplementation (James and Matemu, 2016; Hassan et al., 2007)). This means that efforts to facilitate the use of solar driers would enhance efficiency of AIVs processing. The Centre for Agriculture Mechanization and Rural Technology (CAMARTEC) is promoting solar driers for different categories/scale of processors. This study provided information to processors about possible sources of funds for processing equipment.

Key informant interviews and observations revealed that the key participants in processing of the AIVs were women. This was explained by the fact that those who facilitated the processing activities in the initial instance were trained women. Since women were the ones doing kitchen work, they found themselves doing more vegetable processing work.

Currently, men have also started being involved in the processing of AIVs for income generation. Specifically, some middle aged men now go for the training in processing of the AIVs. On average, more women are involved in the processing of AIVs.

Additionally, women spend more time in processing of the AIVs compared to the men. Members of the focus group discussion estimated that women spend about 90% of the time in processing of the AIVs while men spend about 10% of their time in processing of the AIVs. Women also decide who buys the processed AIVs and as a consequence receive money for the proceeds of

processed AIVs sales. In the event that a decision is to be made on how to spend the money in the household the women make the decisions.

Quantities and quality of AIVs processed

The highest quantity processed was 210 kg of cowpea leaves per year by three groups (Table 5). There were no major differences in the quantities processed by the different groups. The amount of AIVs processed depended mainly on what was produced during the rain season.

During the dry season very small quantities of AIVs were produced and also relatively less was processed. Although there were relatively large quantities of fresh AIVs during the rain season relatively less was processed. This is against the backdrop of bumper harvests of fresh AIVs that occasionally led to gluts in the markets, low prices, spoilage and loss of the expected income from sale of AIVs.

Processors purchase small quantities meaning that they have to do the purchases many times to be able to get reasonable quantities of processed AIVs. Some of the processors reported that it is limited purchasing capacity that conditions them to make small and frequent purchases, which lead to increased transaction costs.

FGDs and KIs revealed that there is high potential for increasing quantities processed and the corresponding incomes. This is due to increasing awareness and changing customs which lead to increasing use of



Figure 2. Dried pumpkin leaves (Source: Survey data, 2015).

convenience foods at home and in the food outlets (Habwe et al., 2008).

There were varied views about the quality of processed AIVs. FGDs revealed that there were no differences in quality of fresh and processed AIVs. Key informants on the other hand had the view that there was a need for Tanzania Bureau of Standards to reinforce quality requirements especially with respect to processing infrastructure and hygiene conditions.

Challenges to AIV processing

The processors do not have the necessary skills, knowledge and training required for processing of the AIVs in more economically attractive ways. It is therefore necessary to provide training at all levels of the processing chain. This means that more households should be given training on better processing methods and techniques.

These include different methods of processing of the AIVs, standards, packaging procedures, cleaning, sorting, and storage, business management skills, marketing training, platforms for exposure, construction of driers, hygiene in AIVs processing, modern techniques of processing, re-fresher courses in drying of the AIVs and food safety.

Indeed, during the FGDs there were requests by the groups for alternative methods for processing. The

processing methods were sun drying and solar drying. In a few instances, there were pre-drying treatments which involved cleaning/washing, wrapping in some clothing and dipping in hot water for a few minutes (blanching), followed by drying.

It was apparent that there was no diversity in the processing methods. Those involved in processing were restricted to only two methods; direct sun drying and solar drying. The different types of processed products need to be known by the processors to enable them make intelligent decisions based on market requirements. Processing methods that could be considered include oven drying, freeze drying and blanching depending on processor capacity.

The products were of two main types which included powder and dried whole leaf (Figure 2 and 3). In this respect again there was no diversity in the products that were processed. Other products that could be processed to diversify the product base include sauce, shredded, crisps and pickles.

The types and sources of packaging materials were restricted in various respects. The main sources of the packaging materials were the local shops/markets in the different regions, Arusha and Dodoma as well as Dar es Salaam in a few instances. Some processors reported that they obtained processing materials from non-governmental organizations, which included Women Development for Science and Technology Association (WODSTA), SIDO and World Vision.



Figure 3. Amaranthus and Avocado powder (Source: Survey data, 2015).

The groups involved in processing noted that they did not have free access to the packaging materials. The materials were in small quantities and in some cases difficult to find. Those involved in processing had to travel long distances to get the packaging materials. Availability of packaging materials was difficult in terms of quantity and quality.

Only 20% of those involved in processing reported to have had adequate supply of the processing materials. Some packaging materials were in larger quantities than the capacity of the processors. The costs of the packaging materials were relatively high and fluctuated frequently. A lot of time was spent moving to the source of the packaging materials such as local markets, Arusha, Dodoma or even to Dar es Salaam. This is underscored by the fact that there was a shortage or lack of appropriate packing materials. Some bottles that were used for packing had leaking seals while others had no seals at all.

The processors did not have special and/or organized storage facilities for the processed AIVs. The group members stored the processed AIVs in their own houses after processing of individual AIVs. The processed AIVs were distributed among the members to store on behalf of the group. This was usually in the normal stores at home and in the houses or in an open area that could be

considered appropriate. Sometimes the processed AIVs were stored in plastic buckets or gallons. There was as a consequence short length of storage and the need for quick and/or immediate sell of the processed products. Lack of storage facilities led to a reduction in the quantities of the processed AIVs as well as deterioration in quality (Table 6).

The equipment necessary for processing were either in small quantities or not available at all. The main equipment used for processing was the solar drier but it was not available in Ndefoni, Onjama and Jikomboe groups. Funds to facilitate processing were not available in the required amounts. The shortage lowered the capacity of the processors to be involved in large/economic consignments.

The share of processed AIVs in the total consumption of the vegetables was 25%, which is much lower than that of the fresh vegetables. This is, however, an increase from the 20% reported by Ambrose-Oji (2012). The low share is because there is greater availability of the fresh vegetables and only part of the fresh vegetables is processed.

AIVs processors were not aware of suitable markets for the processed products. This was due to lack of training on how to market their products. Processing of AIVs was not undertaken as a commercial activity in most of the

Table 6. Problems associated with storage of the processed AIVs

Description of the problem	Number of groups reporting the problem	Percentage (%)
Congested area because the store is small and not specifically designed for the processed AIVs	1	14.3
It is difficult to keep the products for a long time	1	14.3
Lack of funds to construct a store	1	14.3
Molds	3	42.9
Theft of the processed products	1	14.3

Source: Survey data (2015).

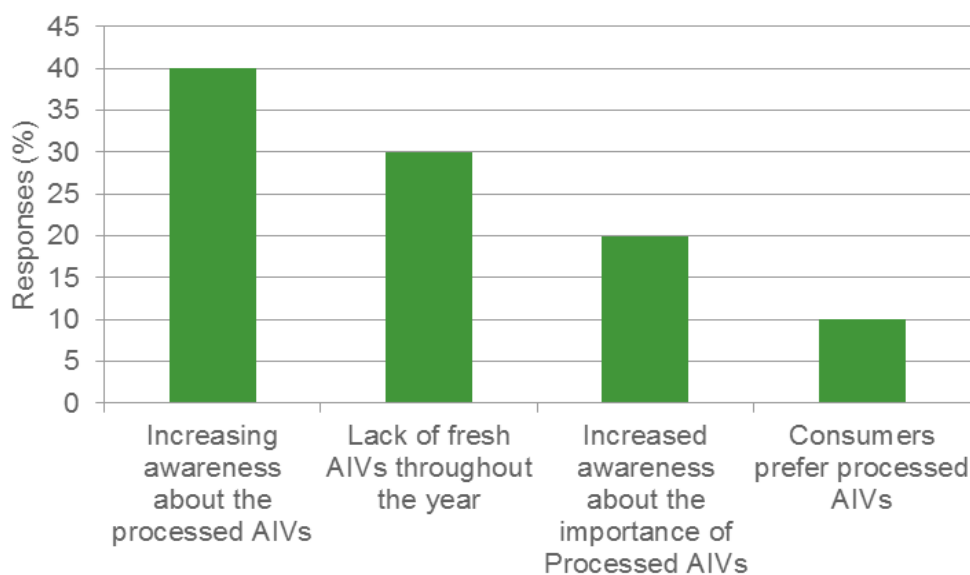


Figure 4. Reasons for the increasing demand for the processed AIVs (Source: Survey data, 2015).

cases. It was instead considered as a subsistence or side activity.

Opportunities for AIVs processing

60% of those interviewed noted that the demand for all types of processed AIVs was increasing. The main factors that contribute to the increase in demand were found to be increased awareness about processed AIVs and the importance of consuming AIVs (Figure 4). Consumers have become increasingly aware of the nutritional and medicinal value of African indigenous vegetables.

This has caused a rise in demand especially in major urban centres. The supply of these vegetables has however not matched this growing demand (Ngugi et al., 2007). With increasing urbanization and population, there is a potential market for the indigenous vegetables. The marketing infrastructure is enhanced by the diffusion of supermarkets and grocers from big towns to smaller ones

and also by the improving hygiene of wet markets that could serve as outlets for the vegetables (Ngugi et al., 2007). Fresh vegetables were not available throughout the year and the situation was worse during the dry season.

Processed AIVs were available throughout the year and more importantly during the dry season. Awareness creation was through agricultural shows, educational institutions and research centres such as World Vegetable Center and HORTI-Tengeru, as well as institutions such as TAHA and SIDO.

In addition, there was sharing of information about the importance of the processed AIVs. Limited efforts were required for the preparation of the processed AIVs. Key informant interviews revealed that the AIVs offer health and nutritional benefits just as the fresh vegetables. The processed AIVs have a relatively good taste compared to the fresh AIVs, which are easy to cook, readily available and easy to handle. They expand during cooking and are therefore able to serve many members of the family

(Figure 4).

The highest demand for the processed AIVs was usually during the dry season. The key reason for this was that during the dry season there was a shortage of fresh AIVs, and hence the proportionate share of processed AIVs was higher. It is important to note that there was still adequate demand during the rain season but relatively less amount of processed AIVs were consumed compared to the large amounts of the fresh vegetables in the market places. FGDs and key informant interviews revealed that the major buyers of the processed AIVs were the women although consumption was by men, women and the youth.

Many institutions are involved in supporting processing of the AIVs. The support is in different forms ranging from provision of technical knowledge/skills, and financial support to capacity building for group formation. These include the Ministry of Agriculture, Food Security and Cooperative (MAFS&C – Extension officers), AFRICARE, World Vegetable Center, CABI, KNFC, SIDO, TFDA, TBS, Community Banks (for example, Meru Community Bank), SACCOs and WODSTA. World Vegetable Center and WODSTA provide training for groups involved in processing of the AIVs. TAHA helps with the supply of raw materials and linking processors to the funding institutions.

The government should enact policies that enable the AIVs yield maximization, and enhance their local and international market-share. This should involve government provision of technology advancements and know-how to the AIVs processors.

In addition, it should provide education on AIVs processing procedures including gathering, treatment, package, storing and distribution to the end-users. The government should fund central AIVs treatment-units and advanced storage facilities. These include machinery for processing and storing AIVs. It is expected that this would enable purchase of municipal merchandize and increased AIVs at regional and family levels that would lead to accomplishment of economies of scale by national agriculture-based SMEs' extroversion and internationalization. Such an approach would assure smooth operation of the processing infrastructure and improved quality of the end products launched by the local families in the market that are hitherto hampered by the high cost and technical limitations of the processors.

FGD participants and key informant perceived the quality of processed AIVs to be the same as that of the fresh vegetables. Consumers were willing to pay more for better processed AIVs. The reasons in support of this view were that the consumers need better quality products. The consumers were keen on good quality. The processed AIVs are easy to store and prepare.

Processing removes water thereby leading to a reduction in bulkiness and microbial activities. Processed AIVs are also available throughout the year and especially during the dry season. It is also more attractive and easy

to store/ transport processed AIVs. There is increasing appreciation of the processed AIVs by the consumers and as a consequence increased consumption by different categories of the consumers. The FGDs and key informants noted that there is an overall perception change in favour of the consumption of the processed AIVs.

Conclusion

Post-harvest processing of AIVs provides market opportunities for the farmers. Instead of relying only on fresh vegetable sales, they can tap into larger markets outside their area by providing alternatives to fresh vegetables. Value addition occasioned by increased shelf life provides better chances for farmers and processors to get good prices and better farm incomes.

Value addition can also help alleviate potential wastage during times of bumper harvest when the market cannot clear the available vegetables. Instead of farmers selling at giveaway prices or losing the product, the surplus can be processed and sold later thereby reducing losses. There is high potential demand for processed AIVs. The richer households tend to consume more fruits and vegetables than poorer households. Urban households consume more than rural households; that is twice the volume of vegetables as rural consumers (Bawden et al., 2002; Okado, 2000). In addition, there are opportunities for supplying other outlets such as wet markets and institutions such as hospitals, schools, and hotels (Ngugi et al., 2007).

Even with the opportunities offered by processed AIVs there are some challenges that require further investment to better tap into the new market opportunities for farmers. A key approach to improve processing and consumption of the processed AIVs would be creation of further awareness through promotion and advertisements of the processed AIVs products.

The promotions could be effected through the Agricultural Shows (for example, NANE NANE), plant clinics, market places and other organizations. Among the issues to be promoted are nutritional and health benefits, ease of cooking, long shelf life, ease of transportation and availability throughout the year. It is also easy to store AIVs for use at own convenience not dictated by given market availability. Alongside awareness creation it is necessary to practice target marketing.

Hence, the need for providing marketing training to the groups involved in processing of the AIVs. Following training, groups of processors need to identify amongst themselves persons that would be involved in the search for markets as well as getting the requirements for the various consumers who would eventually purchase the processed AIVs. The understanding here is that the AIVs would be processed for an already identified market (target market). There should therefore be arrangements

in place regarding the association between the processors and the prospective buyers.

These could include informal agreements, partnerships and contracts depending on the degree of understanding among the two groups. Extension officers and other parties involved in processing of the AIVs need to help in group formation (say by-laws) and crafting of rules of association. The initial approach would be to target the supermarkets, schools, hospitals and prisons.

Some processors did not want the regulatory authorities (TFDA and TBS) to know that they practiced processing due to poor understanding of the regulatory requirements. Other processors were not even aware of the existence of the TBS and TFDA requirements. This means that TBS and TFDA need to create awareness regarding the specific requirements and the need to meet the requirements. The standards need to be made known to the prospective processors. The laws and regulations on the processed AIVs are not yet developed for example, the Global Standards (GS), TFDA and TBS. This calls for fast and effective measures to develop the laws to facilitate effective processing. In principle, the regulatory requirements have to be clearly made known to the processors plus efforts to help the processors to meet the regulatory requirements.

There is need for training on appropriate and affordable processing methods as well as the range of products that could be produced for the different markets. The methods may include electric/oven drying, canning and freeze drying.

These should be complemented with support for the supply of inputs, which include the processing equipment and the packaging materials. Help in the construction of storage facilities is therefore necessary. Given that all activities as of necessity require financial resources linking the processors to financial institutions is warranted.

SACCOs and community banks could provide financial resources to those involved in processing of the AIVs. It is also necessary to guide the processors on how to access transportation services. Product development through different processing methods is a requirement and consideration of sensory evaluation is another avenue. Organizations like TAHA and WODSTA are already working with some groups of processors to facilitate access to the inputs and other equipment but it will be necessary to expand the coverage as well as the persons involved. It is also necessary to promote and/or advertise AIVs processing as a commercial activity. Accordingly, there is need for training on marketing of the processed products.

Quality considerations and assuring consumers that the necessary standards have been met is a key requirement. This calls for improvements in quality of the products. In this case, product branding at two levels is necessary. This should include indicating the key attributes of the AIVs on the packages. Of special concern would therefore be certification by TBS and TFDA as well as having their labels on the containers of the well packed

products alongside the characteristics of the products.

Proper packaging should be associated with good storage to avoid spoilage. It is necessary to create awareness amongst the processors regarding the need for high quality AIVs products, roles of the regulatory organizations and the importance of operating within the required legal framework. Pamphlets, brochures, and other forms of communication should be made available to the processors in addition to the training about the required quality of the AIVs.

Limitation

This study was based on a qualitative assessment. It is appreciated that having more quantitative data would have expanded the inferences. However, this was addressed by use of detailed key informant information.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Information and communication technology and the exploration of regional economic information: An analysis of the economic strategy of the regional investment center of Agadir, Souss-Massa Region, Morocco

Khalid Benamara^{1,2*}, Abdelkader Hermas^{2,3} and Said Chakouk⁴

¹University of Toulouse-Jean Jaurès, France.

²Ibn Zohr University, Agadir, Morocco.

³University of Quebec, Montreal, Quebec, Canada.

⁴Information and Communication Sciences, Faculty of Educational Sciences, Mohamed V University, Morocco.

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Communication has long been considered in light of social facts, territory and economic development. The techniques and practices it involves gradually cover the regional scope. The examination of this convergence is necessary not only in terms of the empirical approach that framework the appearance and development of information and communication technology, but also in terms of the practices engendered. From this perspective, the ultimate goal of the region, established in Morocco in 1997, is to stimulate its economy in order to create investment opportunities. The regional investment center (RIC), an organization undertaking development at the regional level, has a leading role in networking economic information, thus exerting a direct impact on the mobility of businesses locally.

Key words: Information, communication, region, investment, enterprise.

INTRODUCTION

Over the past two decades, globalization and the development of information and communications technologies (ICT) led to the emergence of new models of development, through a complex phenomenon of sedimentation. Morocco has undergone major political, economic and territorial reforms. These reforms are the result of a guideline planning that is part of a long process of discussion between public authorities and private actors.

The years of structural adjustment policy (1983 to 1992) resulted in stabilizing macroeconomic indicators, namely the reduction of public spending. Development strategies for this phase "conceived development in a technical way" (Laghrissi, 2010). The only thing taken into consideration was the need to minimize the state's interventionism and its unilateral control mode. Development policies based on the central role of the

*Corresponding author. E-mail: khalid.benamara@edu.uiz.ac.ma. Tel: +212 06 77 21 67 88.

nation-state and on economic centralization became obsolete.

The adoption of a series of international agreements starting from the second half of the 1990s marked the resolute enrollment of Morocco in a process of economic openness: Joining the World Trade Organization (WTO) in 1995; signing the Association Agreement with the European Union in 1996 and the Free Trade Agreement with the United States of America in 2004. This process goes along with the country joining the information society. The exploration and dissemination of economic information have become an essential issue of development at both national and regional levels.

The research objective of this paper stems from the observation that the integration of ICT and economic activities gives this technology-intensive sector a leading role in spatial integration of the regional economy in Morocco. In this respect, it appears important to consider the methods of intervention of the region as a territorial entity uses with the local business fabric (The entity of region was born in 1997 mainly out of economic considerations as stated in Dahir No. 1 to 97 to 84 of 2 April 1997) (Official Bulletin No. 4470, 1997). In other words, how can ICT networks contribute to the creation of a climate for investment that enables businesses to adapt to competitive markets?

The pre-eminence of information generated from a centralized logic contrasts with the spirit of decentralization advocated by Law No. 47-96 establishing regions in Morocco. This law considers the region as a local community, and has a diagnostic capacity for its territory and the businesses located there. Assuming that locally collected networking information allows enterprises to make better micro-economic decisions, it is necessary to reflect on the role of economic agencies with a regional focus in the development of information methods; especially those agencies that provide companies with competitive advantage when looking for the best implantation sites.

The research objective of this study takes as a case study the communication strategy of the Regional Investment Center of Souss-Massa Region (RIC-SM) in Morocco.

Communication and economic information in Morocco: A contrasting evolution

The actions of regional economic bodies are the backbone of the provincial economic development. Morocco has been engaged in a widespread movement of decentralization since the 1970s. History teaches us that there are no stable boundaries between the responsibilities of the central government and those devolved to the regions during this early time.

These shifting boundaries comprised of the seven economic regions, established on June 16, 1971 (Official

Bulletin No. 3060, 1971), are no more than territorial constituencies grouping different provinces (According to Article 1 of Dahir No. 1-71-77 of 16 June 1971 establishing economic regions, a region is defined as a set of provinces that geographically, economically and socially maintain or are likely to maintain relations to stimulate their development and thereby justify comprehensive planning).

For the sake of simplification, the first decentralization laws assigned the control and management of economic information to the central government: "in this scenario, the territory represents a community in a geographical area, sometimes despite deep economic mutations" (Hinti, 2005). Following this centralized logic of exploration, Hinti (2005) writes that "the majority of information takes place from the center, and is adapted based on the data of national accounts, as a technique for quantitative assessment of the economic activity" (ibid.).

Logic and state of the analysis and dissemination of economic information in Morocco

The first attempts in this context date back to the 1950s with the enactment in 1959 of the Dahir No. 1-29 to 228 on statistical surveys of public services (Official Bulletin No. 2449, 1959). This text set up the Coordinating Committee of Statistical Surveys under the Ministry of Interior and Economy.

In 1973, the investment code was introduced (Official Bulletin No. 3172, 1973). This text is based on studies conducted by the Coordinating Committee of Statistical Surveys on seven economic regions set up in 1971. The goal was to establish segmentation for tax exemption depending on the intensity of economic activity (These are the provinces of Tarfaya, Ouarzazate, KsarEs-Souk, Oujda, Nador, Taza, ElJadida, Settat, Beni-Mellal and Safi). This tax competition has negative effects subsequently, leading to the geographic concentration of tax base.

In 1968, the Committee for Coordination and Statistical Studies (COCOES) was established under Law No. 370 to 67 on statistical studies (Official Bulletin No. 2911,1968). The implementation in Morocco of the Structural Adjustment Program (SAP) between 1983 and 1992 imposed budget constraints during this phase, which had a negative impact on conducting statistical investigations, especially economic ones.

In 1998, a division for economic forecasting and planning was established and attached to the Prime Minister (Official Bulletin No. 4574, 1998). It became a ministry in 2002 (Official Bulletin No. 4832, 2000a). Article 2 of the Decree No. 2-02-397, 2002 assigns to it the collection, analysis and dissemination of economic and statistical information at the national level (Official Bulletin No. 5030, 2002b).

Since 2003, the Ministry of Economic Forecasting and

Planning became an administration under the name of the High Commission for Planning (HCP). The HCP puts online all data from surveys and studies on economic forecasting for short and medium terms through a set of thematic portals whose scope also includes economic development.

In February 2009, the Moroccan Agency for Investment and Development (MAID) was established (Official Bulletin No. 5714, 2009). It was annexed to the Ministry of Industry, Trade and New Technologies and took over the tasks of the Foreign Investment Division created in 1996. Article 3 of Law No. 41 to 08 establishing the agency states that the MAID leads "promotion and communication campaigns to highlight investment opportunities in Morocco; it updates the database related to investment" (Official Bulletin No. 5714, 2009). MAID also presents on its website the whole set of national economic data.

Like the High Commission for Planning, the Moroccan Agency for Investment and Development was subject to the supervision of the state. The fact that it had to follow the practices and procedures of the central administration hindered the promotion of the regional economy. The tasks that the agency has carried out also show how the information gap is detrimental for Morocco in terms of investment attractiveness.

The image of Morocco is tainted by illegal immigration, the conflict of Western Sahara, and the involvement of Moroccans in terrorism. This unacceptable stereotype reveals the serious informational deficit. It is not enough to have expertise, it is necessary to make it widespread.

Hence, there is the challenge of HCP and MAID to market a positive image of the country. Meeting this challenge requires the definition of a proactive and powerful informational strategy, restoring visibility and confidence among economic agents and involving regions in a joint vision. This statement is based on the conviction that the production, processing and spreading of information about the economy of each region should not be out of the local authorities' hands.

What breakthroughs are needed to overcome the logic of central control?

Despite all its improvements, the statistical information system in Morocco remains fundamentally marked by centralization logic. The data on the regional economy, during the collection, processing or distribution, are derived from the global data conceived in decision-making centers concerned with economic, political and administrative matters. As a result, the configuration of businesses in various sectors follows the same logic of centralization. Therefore, the region as a decentralized entity is obliged to go through the information circuits designed at the center to publicize its investment potential. The question that then arises is it to know

which information and communication mechanisms must be set up to make the region, as an administrative entity, play its role of economic leader. There is no systemic response to this question. It is certain, however, that the players in the region, including economic operators and authorities, have the responsibility to lead these mechanisms. Information and communication is another area to institutionalize economic governance among local authorities.

Networking information technology: Towards the creation of regional digital economic clusters

The introduction of ICT frameworks the economic territory, and leads to a greater dependence of the enterprise on its immediate environment. The region can promote the use of ICTs by intervening directly or indirectly with the local entrepreneurial fabric.

The action is direct when the region itself uses informational tools that have a positive impact on the economic life of its territory. This is to simplify administrative and fiscal procedures that entrepreneurs are required to follow. In this respect, we mention setting up digital information networks, economic observatories or watch units that collect and spread economic information. Achieving these goals requires, above all, integrating the territory in information networks.

Like infrastructure networks, a central information network contrasts with the logic of decentralization, which advocates a polycentric development of information databases. From this perspective, the territory is not the juxtaposition of single components, but a coherent system; the flow of economic information is a major relationship between the components of this system.

The region can also indirectly influence the use of ICTs in the economic field by multiplying synergic actions between local companies and competent institutions to solve problems related to the exploration of economic information. Activities carried out directly or indirectly complement each other within the general economic policy of the region.

It is obvious that Very Small Enterprises (VSE), which are an important fringe of the business fabric and represent more than half the companies registered with the central register of commerce (HCP Data), have often neither the skills nor the means to search the web for what can help their growth.

Hence, there is a need to make readily available for them a proximity internet portal that can possibly accommodate young investors or project holders to provide them with useful information on the economic offer in the region: granted benefits, useful addresses, databases, implementation guides, etc. At the same time, the emergence of the concept of networked enterprises and the increasing share of e-commerce in trade have led

to major changes in the economic field resulting in a greater dependence of the enterprise on its immediate environment.

Regions can play a leading role in this field by working for the expansion of proximate internet services. This digital network is not just a mere mass information media. It is a decentralizing medium that allows horizontal communication between members of the same interest group or community.

Regional economic organisations in line with ICT: What is the model for the regional investment center in Agadir?

The key objective of regions, established in 1997, is to encourage investment opportunities. However, these entities cannot achieve this unless they are equipped with efficient instruments to carry out their development policy. The end justifies setting up satellite organizations in the region responsible for supporting economic development, such as the Regional Investment Center (RIC) (This is also the example of two agencies for the promotion and economic and social development of the provinces in northern and southern Morocco).

These regional agencies have legal personality and financial autonomy, and work under the authority of the Prime Minister. They study and propose economic and social programs to the authorities as part of an overall strategy for the development of these regions. It is their responsibility to seek funding for the implementation of projects and take part in it. A strong point justifying its importance is its leadership in promoting investment as well as the collection and dissemination of economic information to investors.

The RIC-SM was established by a joint decree of the Ministers of Home Affairs, Finance, Trade and Industry (Official Bulletin No. 5044, 2002a), following a letter of King Mohamed VI on January 9, 2002 on decentralizing investment management (Official Bulletin No. 4970, 2002b). The RIC has three departments (Figure 1).

The Business Start-up Assistance Department provides investors with the necessary documents showing their businesses are active. This takes a very short time since the RIC has easy access to a number of agents from the Trade and Industry Division, Regional Department of Inland Revenue, the Court of First Instance, the Division of the National Social Security Fund (NSSF) and the Certification Service. RIC-SM intranet connection to the Moroccan Office of Industrial and Commercial Property (MOICP) allows getting the negative certificate on the spot, a substantial gain in time and movement for the investor.

The agents working for the services listed earlier send the information at their hand. The server application of the RIC receives it and stores it in its database. A sketch of the data flow to the server is shown in Figure 2. The

Investor Assistance Department creates databases following the category of visitors. The first category is for information seekers, and allows close monitoring to identify potential promoters and encourage them to invest in the region. The second category is for license applicants. It allows sorting by categories the projects that obtained licenses, and working out a database of the procedures for license application. Claims and litigations constitute a third database. It includes different kinds of litigation requests and their corresponding responses.

ICT is a key factor such that an entire department within the RIC is dedicated to it "the Department of Promotion and Cooperation". This takes in charge publications, produces communication media and distributes them in order to advertise the economic and human potential of the region. Such decentralized communication goes hand in hand with other roles, namely support for setting up businesses and assistance to investors.

The website of the regional investment center

The website of RIC-SM was designed in November 2002. Its funding depends on the operating and intervention budget. The website receives an average of 5,000 visitors a month, mainly foreigners and especially the French. Its graphics indicate two objectives: to facilitate investment through two distinct web spaces (creator space and investor space), providing some electronic forms, and to promote the Souss-Massa region.

The RIC-SM website is available in four languages (Arabic, French, English and Spanish), but only the French can access all content, including forms. The site provides entrepreneurs with strategic information, in particular the cost of the factors of production, market data covering eleven economic sectors, territorial profiles for each of the prefectures and provinces in the region and guides for business setup and investment.

In 2016, the RIC-SM set up a new interactive web portal (www.agadirinvest.com) that better meets the need for information about promoting investment in the region.

The observatory of the regional economy

The creating of an economic observatory for the market started from the will to rely on good knowledge of the environment where economic operators work. This is a typical example of the direct intervention of the region in favor of the business fabric locally.

"The main purpose of the observatory is to facilitate access to information useful for the design and implementation of investment attraction policies as well as for prospective or evaluative studies necessary for



Figure 1. Organization structure of RIC-SMD.
Source: The RIC-SM.

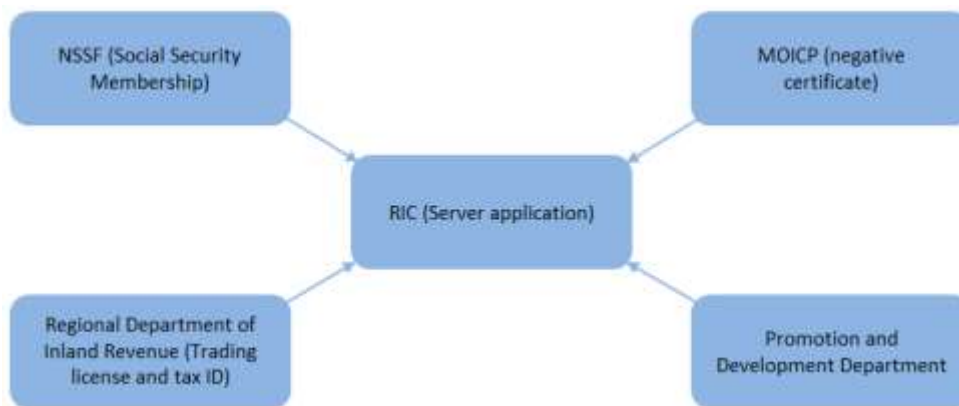


Figure 2. Data delivering process from client computer to server.
Source: The RIC-SM).

them" (Our translation, Alaoui, 2013).

In this respect, a newsletter is issued which was reported in local economic news, information, and services provided to businesses. This measure was recommended in the five-year plan for economic and social development 2000 to 2004: "The region needs to assert itself as an investment magnet. As such, the first step to improve the overall environment for investment must be the availability of socioeconomic information of high quality; therefore, setting up a socio-economic observatory is pressing" (Our translation, *ibid.*).

In 2003, the RIC-SM established a business intelligence body called the observatory of regional economy. This is a continuously updated database to provide entrepreneurs with a collection of statistics about private investment. The collection consists of the data processed by the RIC services and surveys conducted in collaboration with the prefectures and provinces of the Souss-Massa region and technical services involved in the investment process. The editions of the RIC observatory are published in four newsletters available in digital and paper formats.

The approach developed by the observatory relies on several indicators grouped under different categories and the data of which relates to two main underlying

lines: investment and business set-up. The Observatory for Regional Investment makes an inventory of the projects completed or underway starting from 2002 by provinces and prefectures, by sector (tourism, industry, real estate, trade and services) and by year of completion. The observatory of entrepreneurship in turn identifies investment projects by legal form as shown in Figure 3.

The strategic watch unit of the regional investment center

The strategic watch unit is the third part of the communication strategy of the RIC-SM, allowing the dissemination of economic information to a wide audience from entrepreneurs to regional partners. In this respect, we mention the biannual newsletter of RIC-Agadir News, annual reports of activities and weekly newsletters CRI-Echos. The biannual newsletter RIC-Agadir News is a communication medium available in digital and paper formats. It reports on the major events related to investment in the region.

RIC-Agadir News is distributed to businesses, professional associations, and regional, national and

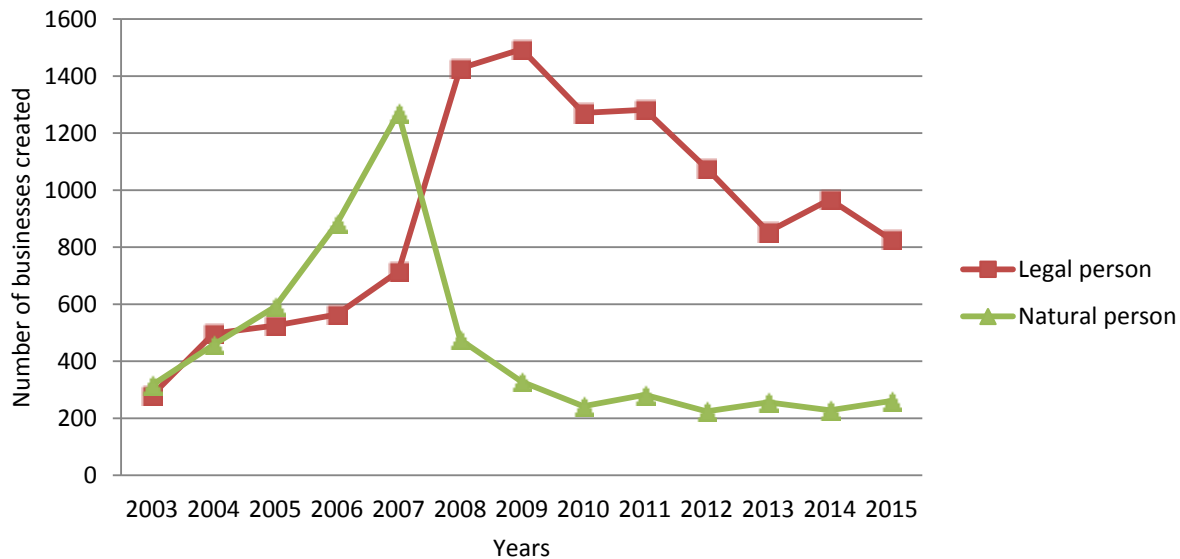


Figure 3. Investments distribution following project legal form.
Source: BilanofRIC-SM 2015).

international public institutions. "The major aspects developed and analyzed in this medium include institutional and regulatory aspects, sector development, physical infrastructure, human resources, changes in the costs of the factors of production, upgrading the regional economy, the benchmark with other territories ..." (Alaoui, 2013).

Since 2004, the RIC has periodically published activity reports that identify investment projects validated or broken down by sectors, permits and negative certificates issued, and a summary of its activities (events, studies, training, cooperation measures and partnership, etc). Since September 2011, the RIC-SMD has also published a weekly newsletter called CRI-Echos. This communication tool reviews economic news to keep in touch with permanent partners and potential investors.

"By issuing this medium, the RIC-SMD team, (...), wants to confirm the increasingly prominent role of RIC, not only as an administrative actor (...) but also as a regional expert in the analysis, recommendation and participation in the implementation of coherent and dynamic economic development strategies" (Our translation, *ibid.*). Thus, sixty-eight CRI-Echos newsletters were issued between 2011 and 2016.

The information services that RIC-SM offers are mainly for small and medium enterprises (SMEs). They rely on means of intervention adapted to the needs of research and the analysis of economic and market data. However, the interventions of the RIC-SM with companies and investors are driven more by emergency than a specific plan for the region. It is more of a cyclical activity than a planned policy.

The interventions of the RIC-SM need to be integrated in a decentralized procedure of economic information.

Souss-Massa region does not have a newsletter to report economic information locally gathered, as some metropolitan municipalities such as Casablanca, Rabat, Meknes and Tangiers do in their local newspapers. The lack of will to conquer this field is due not only to the lack of human and material resources but also to political considerations.

Like other regional economic activities, the search for and distribution of information are subject to the prior approval of the state. In this system, where the meetings of the Regional Council are closely supervised, how and to what extent can public managers in the region carry out their business skills? Strengthening devolution at the expense of decentralization through different constitutional reforms, the last of which dates back to 2002, by establishing regional centers for investment, further reduces the ground of local authorities and municipalities while these can play a significant role in economic development.

In this context, communication appears as a strategic factor in the channels that determine business location. Today a large region needs to have a service for information and structured economic orientation and conduct investigations to reveal its agents' preferences.

Communication policy should be consistent with the image of the region. Agadir can be presented as the first tourist city of Morocco, a qualifier that many observers recognize or accept, while other cities cannot claim a similar qualification. Therefore, there is a need to highlight the specificities of the region within an economic development outlook and see how aspects of the regional identity can be paired with the local products to strengthen the links between image and local resources.

With consideration to the controlling the actions at the Regional Council in Morocco, the region's decision-making powers are confined to the collection and dissemination of collecting and giving economic data to investors and businesses restricting its power to only make proposals. The liberalization of economic opportunities in the region depends on the elimination or at least easing control. This reform is justified today by the fact that the region is subject to other forms of softer control, namely administrative courts and regional courts of auditors.

ICT and the challenge of regional economic development: what advances for Souss-Massa region?

In an environment that is increasingly unstable because of the succession of economic crises, information becomes the nerve of economic clashes that now territories indulge in. It is also a strategic product whose development, processing and dissemination should no longer be the local community's hands. In Morocco, despite the relatively high awareness of the role of local economic information in stimulating investment, this sector has for the moment no priority and still suffers from slow development. This is a failure that needs correction to better institutionalize economic governance of local authorities in Morocco.

Souss-Massa region bears the scars of creative destruction that the Austrian economist Joseph Alois Schumpeter proposed. It is the theatre where two concurrent processes are taking place: the decline of traditional activities and the rise of a structured economy around ICT. The regional development in this sphere is witnessed by the emergence, growth and attracting potential of firms.

In these conditions, prior to mastering ICT requires putting an end to the harmful scheme of the local context by providing appropriate infrastructure to make it a support medium and allow companies to develop and grow there. To this end, the structural facilities need to open up this marginalized space to be protected against any centralizing effect of the means of collecting and communicating economic information. "Though, some studies have shown the accuracy of this hypothesis, namely that the more a region has communication options, the more attractive to outside companies it becomes" (Laramée, 1990). Additionally, this would promote the economic role of the region that should come before all other policies or even condition them.

There is also a direct correlation between the development of communication technologies and the emergence of new regional businesses. In this respect, ICT is a source of endogenous development. Remote communication between local businesses generates new regional networks for economic solidarity. By knowing the

supply and demand for goods and services on a regional database, it is reasonable to expect the emergence of new companies to meet the demand of this region characterized by the predominance of a single activity and is constantly subject to economic risks whose variables are impossible to control.

Conclusion

The concept of a region is closely linked to economic development and promoting investment. From this perspective, the logic of decentralization considers communication as an ex-ante will and a vehicle that determines the location of firms. Information technology coupled with the process of regionalization represents an opportunity to establish lasting relationships between the producers and users economic information at regional level.

It is possible to underline two obstacles that stand against the exploration of economic information at the regional level: the absence of a documentation and information center created by and for the region, and the lack of specialized information, which makes it difficult to process and spread data on various aspects of the regional economy. This is further compounded by the scarcity of economic information at the level of the communities forming the region.

In the region of Souss-Massa, whatever the quality of investment opportunities and proposals, they may be less productive if they are not coupled with and supported by a strategy and a clear and consistent communication system. The Regional Investment Center for, as an agency with a crosscutting vocation, is an essential element of the proposed offer by this region. Its role should be highlighted in any communication strategy directed to the investor because what is difficult to implement at the national level appears feasible in a regional context. Countries that succeed in attracting foreign investment are those that follow, among other things, a single window approach.

Regional investment centers were established as single windows in each region to develop development policies for these territories. Large national macroeconomic actions give way to a local and microeconomic approach to cooperation with companies now considered as partners. The information on the opportunities in the territory is a strategic tool of this policy. The regional framework may be the most appropriate territorial dimension, given the means it has to solve problems related to the collection and dissemination of economic information, a privileged tool for growth.

In Morocco, local communities are becoming a major player in the economic and social development of the territory. To fulfill this mission effectively, they should be equipped with the necessary tools. In order to fulfill its

primary mission, the RIC-SM accumulates a new function: overcoming barriers to entrepreneurial performance in the region in the era of information and communication technologies. By not confining itself to its single window, the RIC-SM does not neglect its mission. It is at the forefront of regional economic thinking in its broadest perspective.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

How do nurses perceive their cultural diversity? An exploratory case study

Mohamed Mousa

Estonian Business School, Estonia.

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Due to its effect on both individual outcomes like job mobility, job satisfaction, job involvement and fair remuneration on the one hand and organizational outcomes like employees' attendance, turnover, cynicism and performance on the other, diversity has become a rising trend more than ever before. The concept is no longer limited to Western countries but has become popular in many parts of the world. This study focuses only on Kasr El Eini hospital and in an attempt to investigate how nurses perceive their diversity. 25 semi-structured interviews were conducted, and the findings reflect that nurses at Kasr El Eini hospital, like many other classes of Egyptian society, struggle in a state of division and lack the value of inclusion in their workplace. Moreover, distributive justice was perceived with doubt by nurses there. The study ends with the recommendation that managers at Kasr El Eini hospital establish a professional identity for the hospital in which the concept "good colleague" should be utilized. Furthermore, paying attention to both inclusion and justice is also a needed mechanism there.

Key words: Diversity, diversity management, affirmative action, in- out group differentiation, inclusion, justice, Egypt.

INTRODUCTION

Owing to local and global uncertainties and interaction among people with different origins, backgrounds and beliefs, cultural diversity has become a rising trend (Devine et al., 2007; Mazur and Bialostocka, 2010). Its existence is no longer limited to western countries like the USA and UK as many countries in different parts of the world have become familiar with it.

However, it is worth highlighting that both public and private organizations in the context of western countries have had a long history in designing and implementing diversity policies with the aim of ensuring a fair

representation for minorities in the workplace (Ashikali and Groenveld, 2015).

Since 1960, the concept of cultural diversity has gained currency in academic research. This has happened as a result of the adoption of some affirmative actions promulgated by the U.S government to eliminate racial discrimination in organizations and universities (Tereza and Fluery, 1999).

Reportedly, initial efforts to address cultural diversity have focused mainly on gender and race (Morrison et al., 2006). However, and as a response to the social,

E-mail: Mohamed.mousa@ebs.ee. Tel: 0037253588302.

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political, educational and economic changes occurring in both the local and global environments, the term "cultural diversity" has markedly expanded to include gender, race, religion, ethnicity, income, work experience, educational background, family status and other differences that may affect the workplace (Heuberger et al., 2010).

Cultural diversity refers to the co-existence of people with various group identities within the same organization (Humphrey et al., 2006). Kundu (2001) indicates that diversity requires the inclusion of all groups of people at all organizational levels. The issue requires an organizational culture in which each employee can utilize his/her full capacity to attain career aspirations without being hobbled on the basis of religion, ethnicity, name, gender or any other irrelevant factor (Alas and Mousa, 2016).

That is why, Cox (1991) clarifies that any effective management for culturally diverse groups should entail the attainment of both individual outcomes (job satisfaction, job mobility, job involvement and fair remuneration) and organizational outcomes (attendance, turnover, performance and consequently profit).

Moreover, Pless and Maak (2004) assert the role of diversity management in creating an inclusive organizational climate in which employee uniqueness is acknowledged, maintained and valued while also feelings organizational citizenship and normally identification with the workplace. Therefore, under the umbrella of diversity management and its inclusive organizational climate, every employee is treated as an insider and experiences a kind of mutual trust with his organization (Nishii, 2013).

Kasr El Eini is the first and largest governmental medical school and hospital in Egypt. (<http://www.medicine.cu.edu.eg/beta1/index.php/en/>). It was established in 1827 in a region called El Manial Island, Cairo. According to its website, Kasr El Ein includes 2773 medical professors and physicians, 3732 post-graduate students, and 9423 students. This medical school and hospital has the mission of graduating quality physicians capable of implementing various levels of health care practices. The school and hospital management are concerned with the development of a competitive human capital that would serve the community and share in solving national health problems. Kasr El Eini is currently the focus of the Egyptian media, politics, and public discourse because of the many difficulties that both physicians and patients face. The majority of its nurses are facing the problem of low involvement and low participation. A famous Egyptian newspaper and website called al3asma has published an investigation to explore the aspects of this dilemma (<http://www.al3asma.com/40137>). Many Kasr El Eini nurses claim that besides their low salaries, the hospital is full of managerial corruption, bias, inequality and nepotism (www.albawabhnews.com/2419159).

Owing to the fact that Kasr El Eini is the main

destination for Egyptian low and middle income families (www.elwatannews.com/news/details/1255899) and that the increase of nurses' irritation is an undisputed fact that may hinder their performance, engagement, and loyalty, this research seeks to fill in a gap in management literature by seeking an answer for the question of how nurses at Kasr El Eini hospital perceive their diversity.

The study starts by giving a comprehensive description of what diversity and diversity management are besides highlighting the theories based upon which diversity can be traced. Next, it elaborates the position of women in Egyptian national culture and seeks to touch on the struggles which women are experiencing there. Thirdly, the study shows the methodology part in which the author indicated how he chose his sample, context, and procedures to conduct and then analyze interviews. Fourthly, the answer of the research question is introduced, and fifthly, the conclusion conveys implications for managers and researchers who may have interest in further investigating the same question or researching the same phenomena.

This study is significant not only because it is, to the best of the researcher knowledge, considered the first to qualitatively investigate diversity perception experienced by a specific category of public employees in Egypt but also because it comes after media coverage of several accidents, which includes church bombings in Egypt and forced migration of a number of Christians from the cities in which they used to live.

Admittedly, there is a national cold peace between Muslims and Christians even though the Egyptian political regime has decided to neglect the issue for the time being. This research takes a closer look to Egyptian workplace harmony by investigating relationships between Muslim and Christian nurses at a section of the biggest public hospital in the country.

It is worth mentioning that a previous quantitative study by Mousa and Alas (2016a) has examined the relationship between cultural diversity challenges (communication, discrimination and training) and organizational commitment of teachers in Egyptian public schools. However, and despite the significance of its findings, it has no direct relevance to the present qualitative study.

LITERATURE REVIEW

Diversity and diversity management

Given the desire to ensure a fair representation for minorities such as women, Hispanics, Indians and also handicapped people, research about cultural diversity started in the USA with the end of 1960s (Zanoni et al., 2009). The first studies about cultural diversity aimed to control the racial discrimination existing in organizations

and teaching places as a step towards cultivating the social coherence inside American enterprises (Dogra, 2001).

In 1986, Canada did the same by launching the employment equity act program which was seeking to enhance a fairer employment system, understand the constraints faced by ethnic minorities and women in the workplace, and also ensure a fair numerical representation of minorities in different Canadian organizations (Agocs and Burr, 1996).

It is needless to say that many other countries like Malaysia, India, Britain and South Africa acted in the same way by facing the cultural discrimination existing in both their public and private businesses (Jain, 1998). It is needless to say that changes in worldwide labor markets besides the tremendous economic investment motivation packages launched by many countries and simultaneously the rising intensive role of multinational corporations have contributed a lot to addressing the topic of diversity and diversity management.

Primarily, it is important to define both culture and diversity separately before going into further details. Culture means "the collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede and Hofstede, 2005) whereas diversity points out the case of being different. The concept diversity stems its roots from a Latin word called "diversus" which means different directions (Sinclair, 1999) according to Vuuren et al. (2012).

According to Hassi et al. (2015) diversity reflects the synergetic existence of differences in age, ethnicity, background, sex and disability. Moreover, Vuuren et al. (2012) define cultural diversity as "the differences in ethnicity, background, historical origins, religion, socio-economic status, personality, disposition, nature and many more".

Tereza and Fleury (1999) consider cultural diversity to be "a mixture of people with different group identities within the same social system". O'Reilly et al. (1998) mention that "a group is diverse if it is composed of individuals who differ on characteristics on which they base their own social identity". Consequently, cultural diversity gives a real indication for world competition and workforce pool nowadays. Loden and Rosener (1991) classify diversity into the following two dimensions:

1. Primary dimensions: shape people self-image such as gender, ethnicity, race, age, sexual orientation and physical abilities.
2. Secondary dimensions: include characteristics that affect people's self-esteem such as religion, education, income level, language, work experience and family status.

Besides the primary and secondary dimensions of diversity, Rijamampianina and Carmichael (2005) add concepts such as assumptions, values, norms, beliefs

and attitudes as a third dimension of diversity. Although the discourse on cultural diversity started in the USA by focusing on differences in ethnicity and gender, it now goes beyond this narrow range to include differences among individuals (tall, short, thin, bald, blonde, intelligent, not so intelligent, and so on) and differences among subgroups in terms of age, sexual preferences, socio-economic status, religious affiliations, languages, and so on (Kundu, 2001; Vuuren et al., 2012).

Humphrey et al. (2006) consider any society as constituted of a diverse range of groups that have diverse needs. Diversity policies constantly seek to create and maintain fairness and representation in various workplaces and, as such, diversity programs which employed both affirmative action and equal employment opportunity to ensure minority representation in workplace have been replaced by policies that pay attention to the business case of diversity. Consequently, diversity policies can lately be considered a vital part of human resources management policies (Ashikali and Groenveld, 2015).

Concerning the advantages of cultural diversity, Hubbard (2011) indicate that building a business case for diversity guarantees a better access to new markets, complete and detailed awareness of current markets, better problem solving dynamics, better attraction and retention of talent and enhanced entrepreneurship and creativity levels.

Moreover, Humphrey et al. (2006) stress that educating people to appreciate cultural diversity entails a support for the values of tolerance and solidarity. Countries can't mirror any democratic norms without promoting respect for diversity and its corresponding values of freedom, equality, and inclusion.

In different perspective, Singal (2014) highlights that a diversity of workplace may be accompanied by increasing costs of training, communication, coaching and managing conflicts. Moreover, forming and maintaining trust between managers and influx of diverse employees is often a challenge. Some studies claim that diversity may hurdle synergy between groups, lead to confusion and thus negatively affect participation especially of people belonging to minorities, the aspect that hinders some groups' attendance, loyalty and consequently productivity (Tsui et al., 1992; Cox, 1993; Mousa and Alas, 2016).

Admittedly, diversity management reflects an acknowledgement and respect for employee differences throughout organizations (Wrench, 2005). In Hudson institute, a publication titled "workforce 2000: work and workers in the 21st century" discusses women's active participation and demographic changes in labor market and ends by highlighting that diversity management has been proved to be a key asset on which organizations can depend to attain a competitive advantage in such a climate of multiculturalism (Johnston and Packer, 1987).

Traditionally, and in order for instill organizational justice, diversity management has depended on both affirmative action programs to redress all past

discrimination and inequality acts and equal employment opportunity programs to ensure heterogeneity at the workplace through legislations, rules and laws. Noticeably, diversity management may be linked to the following two human resources management theories:

1. Social identity theory: Tajfel (1978) considers that social identity theory has come to be a result of previous research on stereotype and prejudice and is considered a shift from individual to group-level analysis of psychological research. The theory claims that individual identity is supported by belongingness to a particular group as it creates much more self-esteem for its members. Accordingly, people feel belongingness to their in-group members and have negative attitudes towards their out-group members. For instance, in male-dominated societies men have higher positions than women because of their belonging to the higher-status group (males). Breakwell (1993) indicates that this theory not only explains intergroup relationships but also reflects individual tendency to create a positive social identity. That's why, Tajfel (1978) elaborates that the main mission of social identity theory is to interpret intergroup conflict and differentiation.

2. Social exchange theory: is one of the most important theories in explaining workplace behavior. Therefore, it can be touched on in various organizational and managerial topics such as psychological contract, organizational justice, board independence and responsible leadership (Cropanzano and Mitchell, 2005). Fao and Fao (1974) identifies that love, status, money, information, goods and services are considered the six types of resources included in employer- employee relationship. According to this theory, when an employer cares about his/her employee and this employee perceives fair treatment from his/her employer, the later subsequently does his/her best to fulfill organizational objectives, and he/she constantly has a positive attitude towards his employer.

According to Devine et al. (2007) and Mousa and Alas (2016b), for the effective management of cultural diversity, organizations should overcome the following three main challenges. First, communication is considered an important mechanism through which employees acknowledge what is required of them, how to implement their jobs and what feedback is produced for them and others in the workplace.

Barrett (2002) considers communication as a means not only for explaining organizational strategy but also for motivating employees to accomplish their jobs. In the area of cultural diversity, the significance of communication stems from its ability to entail a kind of transparency as employees feel justice when experiencing an open communication policy concerning their job responsibilities and feedback reports. Moreover, communication facilitates the creation and maintenance

of formal anti-discrimination complaint procedures (Siebers, 2009a).

Egyptian women and cultural diversity

With a population of 92 million and a geographic location extending between Africa and Asia, Egypt – the country that stretches from Mediterranean Sea in the north to Sudan in the south, Gaza strip in the east and Libya in the west – is constantly considered one of the leading countries in Africa, the Middle East and the Arab region.

Noticeably, this country has a historical extended economic and political relationship with many, if not all, Mediterranean and European countries, the matter that promotes the deep and comprehensive free trade agreement (DCFTA) (Caiazza and Volpe, 2015) to support the Egyptian economic reform launched. Mousa and Alas (2016); Mousa and Abdelgaffar (2017), claim that uncertainty may be seen currently as a main feature of both Egyptian economic and political scenes, whereas Hofstede and Hofstede, (2005) indicates that religion is considered the main determinant of Egyptian culture nowadays.

Moreover, a study made by Hofstede and Hofstede, (2005) asserted the existence of the following four main dimensions in creating and shaping the Egyptian culture:

1. Power distance: reflects the complete acceptance of Egyptian citizens to the unquestionable power their leaders have.
2. Uncertainty avoidance: reflects not only the complete acceptance of Egyptian citizens for their fate but also their tendency to curb and reject any potential tension or intention to change.
3. Individualism: reflects the strong influence for the Egyptian family on individual's behavior and values, and individual's loyalty to such domination.
4. Masculinity: reflects the superiority men have within the Egyptian society. This superiority stems, to a big extent, from the Islamic traditions.

However, and given the results of Alas and Mousa (2016); Mousa and Alas (2016c), it is evident that social norms also play a tremendous role in shaping Egyptian culture which considers the man as the head of the family, the main breadwinner, and the dominant voice in the family, and the woman as obedient to her husband and responsible for raising children and household duties.

Moreover, it is noticeable that Egyptian society accepts women basically for the positions of healthcare, teaching and office support. Therefore, Egyptian women face many phenomena of discrimination in spite of the governmental approval of family and personal status laws to alleviate discrimination against women (UN Report, 2007).

To the best of the researcher's knowledge, there is no official indicator clarifying the number of employed/unemployed, abled/disabled, educated/uneducated and

single/parent women in Egypt. However; there are growing social and media debates concerning women's early marriage, leave to education, and subsequently low participation level in workplace. Such debate emanates from demographic changes, socio-economic development and human right reform.

METHODOLOGY

The research process started in 2016 by gathering all the relevant literature on cultural diversity, as well as its management. As mentioned earlier, the researcher found numerous studies covering the topic of cultural diversity.

However, all of these studies may be divided into three categories. The first category focuses on identifying cultural diversity in either public or private settings. The second category examines how employees perceive and experience it in a specific organizational setting. The third category mostly focuses on determining the consequences of the absence of the effective management of diversity in a specific workplace. Admittedly, what has been noted is the absence of research into cultural diversity in African and Middle Eastern countries.

Furthermore, and to the best of the researcher's knowledge, challenges to diversity have not been addressed before in the previously mentioned regions. The search for previous studies on cultural diversity extended for more than 6 months, and the search process occurred in both English and Arabic – languages the author can manage.

This study decided to conduct an exploratory case study to comprehensively yield as much information as possible since not much is known about diversity in various Egyptian work settings. The study chose to focus only on Kasr El Eini hospital.

It is needless to say that case study research in general is a form of qualitative research that is often used to explore, describe, and explain a particular phenomenon using a variety of data sources (Baxter and Jack, 2008). Yin (2003) affirms that a case study is often used to create a model, develop a theory or suggest propositions. Accordingly, the answer to the research question should entail one of these end results: a model, a theory or propositions.

It is worth mentioning that using a case study approach to answer the first question occurred only after considering the four main conditions necessary for using case studies, which are:

1. The focus of the case study is to answer why and/or how questions
2. The study cannot change and/or manipulate the behavior of his participants or research community
3. The study believes that the phenomenon he is studying is relevant and reasonable to be explored, and
4. The association between the phenomenon and its context is not clear.

Consequently, the study started by determining his unit of analysis (nurses) and then limited this unit (nurses) by time (the focus is on the period after 2011), place (the focus is on Kasr El Eini hospital, which is the largest public hospital in Egypt) in addition to activity (how nurses perceive diversity).

Another important point that should be mentioned is that the author focused on understanding a single unique setting or environment and kept himself apart from analyzing within and across settings. That is why the author employed a holistic single case study not a multiple case study in answering his research question. Despite the emergence of methods like direct observation, focus groups, documentary analysis, participant observation and

archival records used to collect data in this kind of research, the author relied primarily on face-to-face semi-structured interviews as the primary source of data and some public records, newspapers and social media as secondary sources of data.

Upon defining the research setting, the next task was to formally contact an administrator at the hospital to explore how to conduct the interviews. After a week of trials, the author of this article was able to contact one of the executive managers, and the author explained to him the plan of his research.

However, and after a couple of days, the manager apologized to the author saying that the time is not proper for such research because of the sensitive nature of the topic that touches upon one of the most dangerous problems in Egypt, and that it was better to postpone it for a while.

Upon finding a friend of a friend who supervises nurses at the same hospital, the author was able to approach 25 members of the nursing staff who agreed to voluntarily take part in the study. Tables 1 and 2 provided more details about the respondents.

It is worth mentioning again that the study did not manage to choose any one of his respondents, but he was satisfied with the number of respondents found and with their level of experience. The supervisor of these nurses affirmed that all the respondents (25 nurses) serve patients who are anti-regime (people arrested for political reasons, mostly affiliated with the Muslim brotherhood).

The study relied mainly on conducting semi-structured interviews that allowed a more thorough investigation of the respondents' answers. The interviews were held from January to February 2016, and lasted an average of 40 min each. Although the author had planned to obtain supplementary information from hospital documents, unfortunately, the respondents all refused to provide any further documents to the author. Moreover, the interviews focused on a number of questions such as:

1. How do you define cultural diversity? What is your understanding of the hospital's cultural diversity?
2. Do your age / religion/ gender affect the context you perceive? If yes, could you explain?
3. Does the hospital offer you discrete training about tolerance and inclusion? What is your evaluation of your colleagues' assessment and promotion?

As a way of building trust and establishing a rapport, most interviews were conducted at Kasr El Eini hospital (place of work). The first 5 to 10 min of the interviews were used to break the ice between the author and his respondents, and the author elaborated his background for his interviewees, as well as the aims of this study, the reasons for conducting these interviews, and also the author thank his respondents for their voluntary participation. The author tried to take notes as much as possible during the interviews. Moreover, he reviewed the notes at the end of each day on which the interviews were conducted.

It was observed that during the interviews, the participants were reluctant to uncover some critical details with regards to the hospital out of fear of giving a negative impression that may compromise their standing with the hospital and in turn their appraisal and career. Some even went as far as refusing to have their interviews recorded when they were informed that the author would record them.

Moreover, because of the novelty of the procedure for some and because of their overloaded schedules, many participants asked that the interview questions be answered via phone instead of face to face. Added to this, the interviewees instructed the researcher to conduct all interviews in Arabic.

After conducting the interviews, detailed transcripts were made in which the contents of the interviews were typed out. Needless to say that the most interesting findings and information derived from the transcripts were coded. Owing to the specific focus of this

Table 1. The respondents, their religion and years of experience as nurses.

Respondent	Religion		Experience (years)	
	Muslim	Christian	5	8
25	21	4	20	5

Table 2. Religion and years of experience.

Religion	Respondent	Years of experience	
		5	8
Muslims	21	16	5
Christians	4	4	0

research, questions and answers of the research were related to one of these concepts; namely, cultural diversity, discrimination, justice and etc.

Three criteria of trustworthiness were used to investigate the quality of the research: reliability, internal validity and external validity. According to Lillis (2006) and Ihanola and Kihn (2011), reliability is concerned with consistency or the extent to which the researcher accurately defines and represents the problem of his research. In this paper reliability was enhanced by audio recording some of the conducted interviews. Moreover, the author tried as much as possible to carefully select participants and accurately formulated his interview questions

External validity ensures that the results yielded may be generalized to other settings and time periods (Ryan et al., 2002). To improve external validity, the author of this study chose an adequate sample size and paid attention to transferability – which means that the results yielded can be extended to a wider context. To maintain internal validity or the “credibility of case study evidence and the conclusions drawn” (Ryan et al., 2002), this study did not start writing before gathering sufficient knowledge about diversity, the topic of this study. Internal validity was enhanced by cyclical proceedings of data collection and analysis. Upon the nurses’ desires, the interviews were conducted in Arabic, the native language of the researcher.

Given what has been articulated by Onwuegbuzie et al. (2011) who used the term legitimation instead of “validity” to describe the interactive process occurring at each stage in both quantitative and qualitative research, the study adopted inside-outside when doing his study. In inside-outside legitimation, respondents are encouraged to express their internal feelings/views and the researcher did his best to accurately observe the whole set of research components (Onwuegbuzie and Johnson, 2011).

RESULTS AND DISCUSSION

How nurses perceive their diversity within the context of Kasr El Eini Hospital (Egypt)

Although the author of this article firstly intended to address the topic of diversity management at Kasr El Eini hospital, he changed his mind after conducting his first interview with his first respondent as he felt completely uncertain about what diversity means for respondents. Frankly speaking, the author discovered that the concept of diversity is very new in the context he had chosen to

conduct his study in and consequently the majority of respondents were not fully aware of what diversity is, what values diversity includes, and what practices diversity involves. However, and upon elaborating the scope of diversity to every one of the interviewees, it was easy for the interviewer to realize that every one of the respondents was eager to talk freely.

It seems clear for the author that Kasr El- Eini hospital represents a small picture of the Egyptian society nowadays as the same state of societal division was observed in the radar screen. The third respondent said “they discriminate against me simply because I am a Christian woman”, the thought that was completely supported by the discourse of respondent number 17 who clarified that the majority of patients prefer to be served by Christian nurses because only Christian nurses fully understand their job duties not only because nursing is considered a human humble act but also because responsible job performance reflects a good image of religious belief.

Schaafsma (2008) and Siebers (2009b) indicate that people use similarities and dissimilarities to categorize themselves into groups, and as such they positively evaluate people who are similar and negatively evaluate those who are different. This provides interpretation for why Christian nurses only believe in other Christian colleagues.

In the same line Hornsey and Hogg (2000) clarify that individuals offer positive stereotype and favoritism for other in-group members while they have discrimination against those who are out-group members, the matter that clarifies a lot why Christian nurses implicitly accuse Muslim ones of being careless when doing their jobs.

Furthermore, Hogg and Abrams (1993) justify such identification with a particular group as a trial to curb subjective uncertainty and a step to gain further recognition and much more self-esteem. In line with Abrams (1993), Christian nurses think that no one should ask them about their claimed high performance level because the only answer Christian interviewees have here is that they do their best because they are Christian.

Interestingly, all respondents who belong to Christianity confirmed the difficulty they face in perceiving fair assessment and promotion opportunities. However; the interviewer directly questioned his respondents about the reasons of the previously claimed difficulty and the four Christian respondents affirmed that gender, religion and age are the main reasons for such difficulty, but noticeably, all of them didn't consider work performance as a determinant of their assessment and promotion opportunities.

What seems a challenge here is that respondents don't have any doubts concerning the process upon which assessment and promotions rely but instead their doubts are directed towards the fairness of the outcomes (pay, promotion, assessment, and etc.) they receive. This may reflect a huge deficit in adopting distributive justice standards at Kasr El Eini hospital. Rousseau et al. (2009) highlight that employees consider their organization to be fair only when the outcomes they receive like pay, assessment and promotion match contribution (for example, education, experience, effort and etc.) they invest in their workplace, and this is what management scholars call "distributive justice".

Another important contribution that should be mentioned is what had been raised by two of respondents when claiming that their manager, who is a man, only smiles to their Christian colleagues. Furthermore, they added that only Christian weekly, if not daily, report formal complaints concerning discrimination against them at their hospital. They added that they experience a kind of discrimination, which is not real but they know how to use it to put managers, physicians and media under stress. Such expression of thoughts clearly reflects the state of division nurses live in as both Muslims and Christians no longer trust each other.

Accordingly, a question about inclusion should be raised here. Shore et al. (2011) assure that only through inclusion, despite dissimilarities employees accept each other as members in a same group and accordingly loyalty and trustworthiness are enhanced among them. Admittedly, each one of the nurses at Kasr el Eini hospital believes that she is perceived as an esteemed member of the hospital by belonging to a specific group, and hence out-group members are viewed as unsafe and undesirable to deal with.

A point that deserves to be highlighted is that all respondents asserted that they are treated like second-class citizens in their workplace because of the complete domination of men who occupy the full list of leading positions at Kasr El Eini hospital. That's why two respondents indicated that living in a male-dominated society constantly hinders women's fair assessment and development. Accordingly and based on the respondents' view, there is a kind of preferential selection when selecting executives at the hospital.

Brown et al. (2000) highlights that granting any member and/or group a preferential advantage because of a

specific biological or social status not only violates the principles of justice but also alleviates the values of merits, credentials, education, work experience and transparent codes of conduct employees expect to find at their workplaces, the aspect that negatively reflects on employee's performance.

Conclusion

This study aimed to answer one question concerning how nurses perceive their diversity. Having conducted 25 interviews, the author of this paper succeeded in deriving an answer to the research question. The findings reflected a state of division the nurses at Kasr El Eini hospital are struggling with.

Unfortunately, according to social identity theory, Christian nurses strongly try to identify themselves with other Christian colleagues and show pleasure in announcing belongingness to their religious group. They collectively evaluate Muslim nurses negatively. The same can be said about Muslim nurses who accuse Christians of manipulating the situation of being a minority in the workplace and pressure managers to gain the best possible outcomes for themselves.

A high level of uncertainty was evident with regard to the value of inclusion at Kasr El Eini hospital. The analysis proved that Christians who are the minority are not treated as insiders nor are they motivated to retain their uniqueness at the hospital as they claim. Furthermore, Muslim nurses believe that interactions move smoothly only with other Muslim colleagues simply because, according to them, they are safe and similar. Therefore, such an absence of inclusion contributes considerably to the phenomenon of positive/negative stereotyping, prejudice, and bias towards in and out group members at Kasr El Eini.

A lot can be said about the role justice plays in enhancing employee loyalty, commitment, level of satisfaction, positive attitudes towards work, and hence definitely also performance (Siebers, 2009a). The case investigated here touches upon a claim that a mismatch exists between the nurses' credentials (education, experience, effort and so on) on the one hand, and their assessment outcomes on the other (pay, promotion, assessment and so on). This is known academically as a violence of distributive justice, and negatively reflects nurses' attitudes towards their job, colleagues and hospital as clarified in the study by Rousseau et al. (2009).

The main theoretical contribution made by this study lies in creating a model for diversity boundaries in the Egyptian context. This model clearly suggests that in and out-group differentiation, feelings of inclusion and exclusion and distributive justice are the main boundaries to attaining an inclusive diversity climate. Accordingly, the effective management of the three previously mentioned

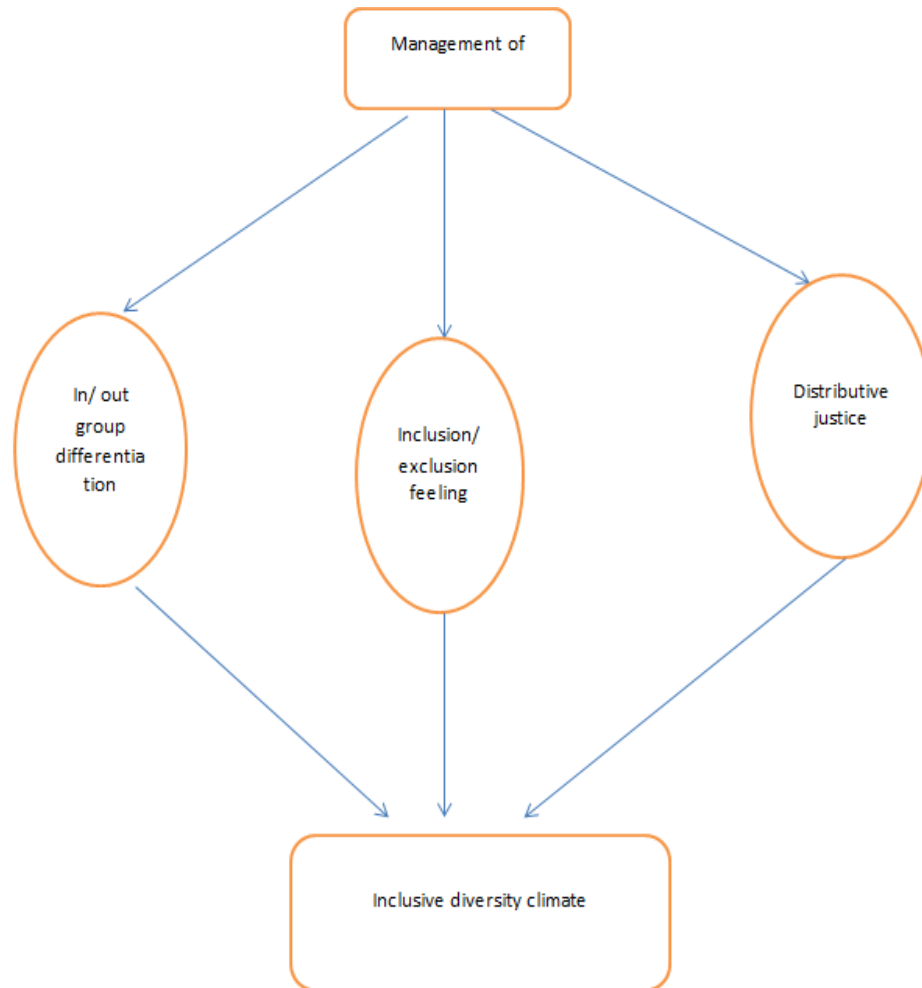


Figure 1. Diversity boundaries in the Egyptian context.
Source: Created by the author.

boundaries not only promotes the feeling of inclusion but also alleviates the use of the word “otherness” inside the work setting. Consequently, both similarities and dissimilarities are discovered and respected and all organizational members contribute to building a harmonized workplace (Figure 1).

Although many countries are experiencing a very similar state of division, and that diversity is considered one of the main features of life, the present results cannot be generalized to other similar contexts whether in a developed or developing country without first answering the same research question there. The main reason behind this is the huge cultural, societal, economic and political differences between countries.

Implications for managers

Managers at Kasr El Eini hospital and top executives at the Egyptian ministry of health should worry about such

discrimination and in-out group differentiation in the context of the hospital studied. Moreover, the following are the main implications that need to be addressed to eliminate cultural diversity bias:

1. A development of professional identity for the hospital should be fostered. This identity should be narrowed inside the hospital to department identities and also section identities. The main aim of developing this identity is to curb in-out group comparisons by using the concept of “good colleague” and subsequently, this identity will provide a common platform for collaboration, discussion and achievement.

2. The time is not proper for adopting any affirmative action or preferential selection because Muslims and Christians equally complain about bias and discrimination. Instead, an adoption of equal employment opportunity paradigm based on individual credentials (for example, education, experience, effort, etc.) should be considered. Needless to say that adopting such equal

employment opportunity provides more space for hiring qualified people, eliminating nepotism and curbing ostracism.

3. Neutral communication should be extensively employed. It is important to communicate with nurses about their job descriptions and responsibilities in order to encourage an open door policy of communication that would allow diversity, create confidentiality, and motivate supervisors to intervene in any work-related bias and/ or prejudice. Therefore, this study may be considered as a prompt to create a clear anti-discrimination policy, with procedures and follow ups.

Some limitations of this study need to be brought to attention. Due to time constraints, it was not possible to conduct more than 25 interviews. Given the fact that the answer for the main question of the research is completely based on interviews, it appears, to some degree, that some of the interviewees answer the researcher's questions in a socially desirable way, and it was not possible for the researcher to adjust their willingness to talk.

The researcher considers that his inability to choose all his respondents may have been the main reason for such behavior. Moreover, not everything said was used in the researcher's analysis and also, not every interview was recorded. Some of the interviewees refused to have their interviews recorded. However, the researcher thinks that he got sufficient data to answer the main question of his research.

For future research, the researcher considers addressing the same research question to nurses in other departments and for other categories of employees (physicians and managers) at the same hospital. Moreover, with such cultural differences problems organizations are urged to consider diversity management as a main part of any human resources development activity, whether this is the case at Kasr El Eini hospital is a matter that the researcher should find a clear answer for.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

Impairment of goodwill, IAS 36 and determinants of mandatory disclosure in Italian listed companies

Alain Devalle*, Fabio Rizzato and Pietro Pisoni

Department of Management, School of Management and Economics, University of Turin, Italy.

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Disclosure allows investors to understand financial performance. The study provides findings on the level of compliance of mandatory disclosure concerning the impairment of goodwill under IFRS and its determinants. The examined sample is composed of 145 Italian listed entities. Size variables, performance variables and amortization of goodwill variables were tested in order to verify the determinant of the compliance with mandatory disclosure of the impairment of goodwill. We have run an ordinary least square (OLS) regression model: results show that the weight of goodwill, the way entities amortize goodwill and the size of the firm are positively associated with the mandatory disclosure requested by IAS 36. We have contributed to previous studies by providing findings on the role of mandatory disclosure, which is a fundamental characterization in accounting and extremely current after the publication of the Discussion Paper by the international accounting standards board (IASB). The contribution to current literature is to provide findings on the determinants of mandatory disclosure of goodwill in Italy.

Key words: Intangible assets, goodwill, impairment test, financial mandatory disclosure, annual report, compliance, dscore index, IAS 36.

INTRODUCTION

Disclosure of the annual report is an important topic for users of the annual report. Disclosure permits users to comprehend the application of the accounting standards used by entities in order to analyze significant data as stated by Healy and Palepu (2001) and Graham et al. (2005).

The international accounting standards (IAS) Framework states that users rely on information enclosed in the annual report to make decisions. A full and comprehensive disclosure produces economic advantages for entities, even if it requires investments in

information systems (Devalle and Rizzato, 2012).

Financial disclosure is made up of financial information (numerical or qualitative) on a mandatory or voluntary basis, via formal or informal channels (Gibbins et al., 1990). The main source of financial information is the annual report of an entity that includes a statement of comprehensive income, a statement of financial position, a statement of changes in equity, a statement of cash flows, the notes and other statements and explanatory material that are an integral part of the annual report (for example, the management report). Disclosure can be

*Corresponding author. E-mail: alain.devalle@unito.it

classified in different ways: mandatory or voluntary, financial or non-financial, and so forth (Devalle and Rizzato, 2013).

In this paper, we focus on the mandatory disclosure provided in the notes of public entities. Disclosure of the annual report is a topic fueled by International Financial Reporting Standards (IFRS) with the “disclosure Initiative,” a portfolio of implementation and research projects aimed at improving the effectiveness of annual report disclosures.

In March 2017, the IASB published a discussion paper (DP) on disclosure initiative - principles of disclosure stating that “the main objective [...] is to identify disclosure issues and to develop new, or clarify existing, principles of disclosure in IFRS to address those issues.

The principles proposed in the DP build on the existing requirements of IAS 1, and the concepts being developed in the conceptual framework project. The goal is to amend IAS 1, or to create a new disclosure standard that would incorporate and replace parts of IAS 1 (either outcome is referred to as the ‘general disclosure standard’ in the DP, and in the rest of this document)” (IFRS in Focus, 2017). IFRS in focus also stated, “in a nutshell, the disclosure problem is the perception that annual report do not provide enough relevant information, include too much irrelevant information, and communicate the information ineffectively”.

The aim of this research is to assess the attitude of the Italian listed entities to disclose mandatory items with reference to IAS 36 concerning the impairment of goodwill, by means of an empirical research. Intangible assets (IA) are a relevant asset in many companies, and the financial crisis showed the necessity to write off the value of IA and in particular goodwill.

The information required by IAS 36 is very important for investors in order to evaluate the consistency of intangible assets. Thus, when intangible assets are relevant, disclosure is extremely important in evaluating the performance of the entity analyzed.

The study objective is to analyze the variables that impact on the compliance of mandatory disclosure of IAS 36 on the Italian securities market exchange. The study contributes to establishing the compliance of mandatory disclosure, which is a fundamental definition in accounting and extremely current after the publication of the DP by the IASB. The results of the study research can be extended to other stock markets, where the government evaluates the possibility of making mandatory IFRS for listed entities. In addition, the results of our research can be extended to other stock markets, where the government evaluates the possibility of making IFRS mandatory for listed entities.

LITERATURE REVIEW

The analysis of previous literature reviews showed that

several research studies have been conducted on disclosure (both on mandatory and/or on voluntary disclosure). The study has focused its analysis on the papers published after the year 2000.

Abd-Elsalam and Weetman (2003) analyzed the annual reports of listed non-financial entities in Egypt when IFRS were first introduced. Glaum and Street (2003) conducted an empirical research study on the compliance with disclosure both under USGAAP and IFRS for entities listed on Germany's New Market.

Results show that the compliance with IAS and US GAAP disclosure is positively related to entities being audited by the Big 4 auditing entities. The analysis is based on an overall mandatory disclosure of IFRS. Result shows that there is a low level of compliance, depending on the type of auditing firm used.

Ali et al. (2004) examined the compliance with mandatory disclosure requirements by national accounting standards in South Asia. The paper is based on non-IFRS GAAP. Akhtaruddin (2005) analyzed the Bangladesh market under local GAAP. Al-Shammari et al. (2008) analyzed the compliance of mandatory disclosure under IFRS over a period of time (1996 to 2002).

The sample analyzed is based on entities listed on Bahrain, Oman, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates. Hodgson et al. (2008) focused on the linkage between the analysts' earnings forecast errors and firm compliance with the disclosure requirement of IFRS. The analysis on mandatory disclosure was also made in the Kuwait Market.

The results showed that there is a medium level of compliance (69%) and the company size influence significantly and positively IAS-required disclosure (Al Mutawaa and Hewaidy, 2010). Two research studies analyzed the Greek market. Galani et al. (2011) did a research into disclosure for the year 2009, before the introduction of IFRS in Europe.

Tsalavoutas (2011) analyzed 153 Greek entities that draw up the financial statements in compliance with IFRS. The sample examined refers to the year 2005. The contribution of the paper is based on the measurement of the level of compliance by providing two different disclosure index method.

Glaum and Street (2003) studied the compliance with IFRS 3 and IAS 36 across 17 European Countries. Italy is considered in the sample but only analyzing 33 entities. The results on the Italian market are not significant. Tsalavoutas et al. (2014) made a study of a worldwide application of the mandatory disclosure of IFRS 3, IAS 38 and IAS 36.

Also in this study, the Italian sample is based only on 20 companies. With reference to the Italian contest we found another paper (Prencipe, 2004), that refers to voluntary disclosure before the introduction of IFRS in Italy. Devalle et al. (2016) made an in-deph analysis of mandatory disclosure considering different variables and

different IFRS. This paper bridge the gap in the literature review by focusing only on mandatory disclosure of the annual report with reference to IAS 36 (Intangible Assets). Furthermore, the analysis is based on Italian listed entities belonging to the FTSE All-Share Index. The total number of entities analyzed was 218, and the main source of information was the consolidated annual report.

Development of hypotheses

In order to assess the determinants that influence the mandatory disclosure of IAS 36, the following hypothesis was tested.

H1: Disclosure of impairment is positively correlated with the size of goodwill

Many studies in the literature have shown a positive correlation between the size of the entity (measured alternatively as the total investment, market capitalization, total revenue, number of shareholders, etc.) and the quality of disclosure (Inchausti, 1997; Marston and Robson, 1997). If this concept is generally accepted, it can also be claimed that the dimension of a specific annual report item has an impact on the compliance of disclosure relative to the identification and assessment of that particular item. Therefore, this study examines the existence of a positive correlation between the size of the goodwill, measured as goodwill size, equity on goodwill and weight of goodwill. According to previous research, we expect a significant and positive correlation with the different configuration of the size of goodwill, and the compliance of mandatory disclosure with IAS 36.

H2: Disclosure of impairment test of goodwill is positively associated with the entity's performance

Return on equity and gearing: In literature, many studies show that entity profitability is positively correlated with the level of disclosure provided by entities in their annual reports (Singhvi and Desai, 1971; Singhvi, 1968; Wallace et al., 1994). Entities with high profitability are indeed more inclined to provide positive and comprehensive information to the market. On the other hand, some studies say the opposite is true, that is, there is no correlation between entity performance and the

quality of the disclosure of the annual report (McNally et al., 1982; Raffournier, 1995). There are different configurations of an entity's performance; this study used the return of equity (ROE) and the gearing (Wallace, 1987; Inchausti, 1997). A clear relationship is not too expected between performance ratio and the compliance of mandatory disclosure of goodwill with IAS 36.

H3: Disclosure of impairment test of goodwill is positively associated with the amortization of goodwill

Amortization of goodwill deriving from the negative consequence of the annual impairment test has a positive correlation with the compliance of the mandatory disclosure established by IAS 36. We expect that the entities that amortize goodwill are also the entities that show more compliance information about the variables used to do the impairment test of goodwill.

METHODOLOGY

The sample is made up of Italian listed entities (FTSE All-Share) that report the presence of goodwill in the annual report, as shown in Table 1. Consequently, the final sample of the analyzed entities is made up of 66% of the total sample.

We hand-collected the mandatory disclosure of IAS 36 (par. 126 to 135) from the notes of the consolidated annual report. We identified 48 main items of mandatory disclosure of IAS 36. We then hand-collected 6,960 items from the notes on the 145 entities analyzed and subsequently we identified a disclosure index in compliance with Cooke (1989).

We assigned one point if an item of mandatory disclosure of the impairment of goodwill (IAS 36) was present (dichotomous approach) (Devalle and Rizzato, 2013): each piece of information was weighted and the maximum total of points was 48. The formula of the Dscore Index is the following (Devalle et al., 2016):

$$Dscore_{unwe_j} = \frac{\sum_{i=1}^n d_i}{\sum_{i=1}^n x_i}$$

where:

$Dscore_{unwe_j}$	Index unweighted for the entity j
i	Item examined
x_i	1 if relevant; 0 if not relevant
d_i	1 if present; 0 if not present

The OLS regression model was used in this study, coherent with previous studies (Botosan, 1997):

$$Dscore_IAS36_i = \alpha + \beta_1 GW_i + \beta_2 Imp\ GW_i + \beta_3 \frac{Equity}{GW}_i + \beta_4 \sqrt{\frac{GW}{Asset}_i} + \beta_5 Gearing_i + \beta_6 Roe_i + \beta_7 Sector_i + \beta_8 Audit_i + \varepsilon_i$$

RESULTS

The descriptive statistics of the variables are presented in

Table 2. In Table 2, we present the descriptive statistics concerning the independent variables used to verify the determinant of the compliance with the mandatory disclosure of the impairment test required by IAS 36.

Table 1. Presence of goodwill.

Answer	N	Percentage (%)
Yes	145	66.5
No	73	33.5
Tot.	218	100

Table 2. Descriptive statistics of independent variables.

Variable	GW	$\frac{Equity}{GW}$	$\frac{GW}{Asset}$	Gearing	ROE	IMPGW	Sector	Audit
	Goodwill	Equity/Goodwill	Weight of goodwill on investments	$\frac{Financial\ Debts}{Equity}$	$\frac{Net\ income}{Equity}$	Impairment of goodwill	Industrial/Non-industrial	Big 4/ Non- big 4 auditing firm
	Numerical. (/million euros)	Quantitative	Numerical	Numerical	Numerical	Dummy	Dummy control variable	Dummy control variable
N	145	145	145	145	145	-	-	-
Missing	0	0	0	0	0	-	-	-
Mean	331.1484	16.6669655	0.3129	26.7539	.0017666	-	-	-
Std. Deviation	782.73095	48.13633346	0.18768	280.64458	.35081348	-	-	-
Skewness	3.653	6.884	0.489	12.034	-3.472	-	-	-
Kurtosis	13.823	56.632	-0.700	144.881	26.035	-	-	-
Std. Error Kurtosis	0.400	0.400	0.400	0.400	0.400	-	-	-
Minimum	0.06	-0.22000	0.02	-24.07	-2.63054	0.00	0.00	0.00
Maximum	4,417.00	465.48000	0.78	3382.18	1.31490	1.00	1.00	1.00

The first group of independent variables used in the study model is the size of goodwill. As shown in Table 4, we used three different configurations: goodwill, the ratio between equity and goodwill, and the ratio between goodwill and total assets. The mean of goodwill in the sample analyzed is equal to 331.15 million Euros and the standard deviation is equal to 782.73 million Euros.

This means there is a strong dispersion of the value of goodwill from its normal distribution. The minimum value of goodwill in the sample analyzed is equal to 60,000 Euros and the maximum value is equal to 4.41 billion Euros. The ratio between

equity and goodwill shows that, in mean, the equity is 16.67 times bigger than goodwill with a minimum value equal to -0.22 and a maximum value equal to 465.58 times. The negative value is influenced by the negative value of equity.

The results show that goodwill is an important item in the balance sheets of Italian listed entities and, for this reason, the information about the evaluation is very important for investors. We can make similar considerations about the ratio between goodwill and total assets. The second group of independent variables used in the study is the performance variables measured through

ROE and gearing.

As shown in Table 4, the mean of ROE is equal to 0.17% with a maximum value equal to 131.40%, and a minimum value equal to -263.05%. Gearing is the ratio between the financial debt and equity. As shown in Table 4, the minimum value is equal to -24.07 and the maximum value is 3,382.18. Also in this case, the value of mean (26.75) and standard deviation (280.74) show that there is a strong dispersion of the value from its normal distribution.

The last independent variable used in the study is the attitude by the entities to amortize the

Table 3. Descriptive statistics of dependent variable.

Variable	GW	
	Dscore IAS 36	-
Type of variable	Numerical	
N	145	-
Missing	0	-
Mean	0.6759	-
Median	0.7500	-
Std. Deviation	0.14091	-
Skewness	-0.679	-
Kurtosis	-0.024	-
Min.	0.38	-
Max.	1	-
Disclosure compliance level		
Level	No	Percentage (%)
90 to 100%	1	0.69
80 to 89%	16	11.03
70 to 79%	65	44.83
60 to 69%	36	24.82
50 to 59%	13	8.97
Less than 50%	14	9.66
Total	145	100.00

goodwill. This is a dummy variable, and it assumes a value equal to 1 if the entity amortized the goodwill in the annual report and 0 if this is not the case.

In the study model we have considered two control variables: sector (financial and non-financial) and auditing firm (the big 4 and other). Finally, we can see that there are no missing values in the study sample, because we used a balanced sample. All the variables were observed for each entity. The descriptive statistics of the Dscore (dependent variable) are reported in Table 3.

Table 3 shows an interesting result: there is a low level of compliance with mandatory disclosure requested by IAS 36 concerning the impairment test of goodwill. This result is consistent with previous literature review (Al Mutawaa and Hewaidy, 2010; Galani et al., 2011; Devalle et al., 2016).

The minimum value of the Dscore is equal to 38%, and the maximum value is 100%. The mean of Dscore is 67.59% with a median value equal to 75%, and the standard deviation equal to 14.09. These values together with the value of skewness (-0.679) and kurtosis (-0.024) show that the distribution is skewed to the right. Thus, it is clear that even though the information about the items used by the entities for the impairment test of goodwill are mandatory, many do not disclose all the information.

For this reason, it is very important to verify which determinants significantly influence the compliance of Dscore requested by the IAS 36. We made the following

assumptions of the OLS model in order to explain the appropriate estimator of the regression coefficients β_i : the first one, which is implicit in the OLS model, is that there is a lack of multicollinearity. Table 4 shows that there are no significant correlations (Pearson correlation test – PC test) (Table 4).

Of all of them, the most important is the correlation between $\sqrt{\frac{GW}{Asset}}$ and $\frac{Equity}{GW}$ (-0.395) and Sector and $\sqrt{\frac{GW}{Asset}}$ (0.328). The second assumption we made is the lack of heteroscedasticity by means of the Withe test. We found heteroscedasticity in the model, and for this reason we used the robust standard error (Table 5).

Table 5 shows the regression parameters, the robust standard error and the VIF. The VIF prove the absence of multicollinearity between the independent variables. The R^2 is equal to 0.293: this value is an adequate considering the typology of this study. In fact, the most important studies on the subject refer to the quality of the disclosure of the annual report and not, instead, to the specific items on the annual report characterized by high levels of objectivity during both the identification and the assessment phase.

The results show that the ratio between equity and goodwill significantly influences (p -value < 0.01) and negatively ($\beta = -0.001$) affects the compliance of disclosure for IAS 36. This result is very interesting in that it highlights that the greater the capacity of the entity to

Table 4. Correlations.

Variable		GW	ImpGW	$\frac{Equity}{GW}$	$\sqrt{\frac{GW}{Asset}}$	Gearing	ROE	Sector	Audit
GW	PC	1	-	-	-	-	-	-	-
	Sig. (2-tailed)	-	-	-	-	-	-	-	-
	N	145	-	-	-	-	-	-	-
ImpGW	PC	0.263**	1	-	-	-	-	-	-
	Sig. (2-tailed)	0.001	-	-	-	-	-	-	-
	N	145	145	-	-	-	-	-	-
$\frac{Equity}{GW}$	PC	-0.121	0.124	1	-	-	-	-	-
	Sig. (2-tailed)	0.146	0.137	-	-	-	-	-	-
	N	145	145	145	-	-	-	-	-
$\sqrt{\frac{GW}{Asset}}$	PC	0.160	0.177*	-0.395**	1	-	-	-	-
	Sig. (2-tailed)	0.055	0.034	0.000	-	-	-	-	-
	N	145	145	145	145	-	-	-	-
Gearing	PC	-0.034	-0.043	-0.017	-0.051	1	-	-	-
	Sig. (2-tailed)	0.682	0.611	0.843	0.543	-	-	-	-
	N	145	145	145	145	145	-	-	-
ROE	PC	0.058	-0.030	-0.087	0.055	-0.020	1	-	-
	Sig. (2-tailed)	0.489	0.724	0.300	0.510	0.815	-	-	-
	N	145	145	145	145	145	145	-	-
Sector	PC	-0.292**	0.075	-0.065	0.328**	0.023	-0.059	1	-
	Sig. (2-tailed)	0.000	0.370	0.439	0.000	0.781	0.480	-	-
	N	145	145	145	145	145	145	145	-
Audit	PC	0.147	-0.086	-0.152	0.069	-0.228**	0.102	-0.066	1
	Sig. (2-tailed)	0.077	0.305	0.069	0.412	0.006	0.222	0.429	-
	N	145	145	145	145	145	145	145	145

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

deal with goodwill, the lower the tendency of the entity to provide disclosure in the notes of the annual report regarding the impairment test of goodwill. This behavior is linked to the concept of significance and the importance of the information, which are key principles in order to apply the IFRS correctly.

In particular, the variation of a unit in the ratio between equity and goodwill reduced the compliance of the Dscore by 0.001 units. The impairment of goodwill has a significant (p-value < 0.01) and positive ($\beta = 0.100$) effect on the quality of the disclosure. In particular, an analysis of the regression parameter shows that when there is a depreciation of goodwill, the entities have a higher attitude to report items regarding the application of the impairment test to the notes to the annual report.

This tendency decreases when there are entities that have not carried out the depreciation of goodwill during 2013. Another independent variable that has a significant (p-value < 0.01) and positive ($\beta = 250$) effect on the Dscore of the IAS 36 is the square root of the ratio between goodwill and the total sum of the investments. This data is also interesting because, as the regression parameter is positive, it shows that as the weight of goodwill on the total sum of the investments increases, so too does the tendency of the entities to disclose information in the notes to the annual report.

The last variable that has a significant impact (p-value < 0.01) on the quality of the disclosure regarding the impairment test of goodwill is the gearing index, which is the relationship between the financial debts and equity.

Table 5. Regression result.

Independent variables		Coefficient	Collinearity statistics	
		β_i	Tolerance	VIF
α	(Constant)	0.592	-	-
β_1	GW	-0.056	0.758	1.318
β_2	ImpGW	0.100***	0.838	1.194
β_3	Equity/GW	-0.001***	0.780	1.282
β_4	$\sqrt{GW/Asset}$	250***	0.682	1.466
β_5	ROE_total	-0.041	0.978	1.022
β_6	Gearing	0.332***	0.939	1.065
β_7	Sector	-0.069	0.755	1.324
β_8	Audit	0.068	0.890	1.124
-	F	7.042***	-	-
-	R^2	0.293	-	-
-	N	155	-	-

The beta coefficient, equal to 0.332, shows that the greater the impact of the financial debt on the equity, the greater the tendency of the entities to provide information on the assessment of goodwill.

CONCLUSION

The results showed a low level of compliance with required disclosure defined by IAS 36 concerning the impairment test of goodwill in the Italian market, which is consistent with previous literature. This result is important also for the IASB and the project on disclosure: even if disclosure is required, many entities do not report data in the notes.

With reference to the determinants that influence the Dscore, the results also showed that the effects of the relationship between equity and goodwill are significant and negative ($p < 0.01$) and the impairment of goodwill has a significant and positive effect on the compliance with mandatory disclosure ($p < 0.01$). Furthermore, another independent variable that has a significant and positive effect on the IAS 36 Dscore is the square root of the ratio between goodwill and the total sum of the investments ($p < 0.01$).

The last variable that has an impact on the compliance of the disclosure regarding the goodwill write off is the gearing index, which is the relationship between liabilities and equity. The main limitation of this paper is the fact that the sample is based only on Italian entities. Future researches should improve the sample by making a cross-country analysis for different years.

The next step will be to make an analysis of mandatory disclosure of IAS 36 between different EU countries to verify if the market where the firm is listed also impacts the disclosure.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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