

# **PROCEEDINGS**

**4th GLOBAL ACADEMIC MEETING,**

**GAM 2015**

*10-11 October, Dubai, UAE*

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# ISLAMIST MOVEMENTS IN MOROCCO AND THEIR TYPOLOGY

*Dr. Driss Bouyahya*

University Moulay Ismail, Meknes, Morocco

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## Abstract

The Islamist movements are far from homogenous. Pluralistic by nature, Moroccan Islamism can be divided into two groups: The Party of Justice and Development (Hizbo al- adala wa- Tanmia, PJD) under the direction of Abdelilah Benkirane, and Justice and Charity (al- adl wal- Ihsan, JC) led by Mohamed Abbadi. All groups and organizations that constituted Islamist movements have different and diverse objectives. While the non-political groups have no concrete political objectives, they have a number of goals closely linked to the religious and moralistic dimension of Islam. On the other hand, the Islamist political movements, which are the subject of this study, target the restructuring of state- society relations in the image of Islam's early golden years; others raised issues of equity and justice in open public discourse. The study traces back the birth and the growth of Islamist movements, mainly apolitical Salafists and militants, whereas the Islamist political movements that grow from a group to a party have evolved drastically and differently.

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**Keywords:** Islam-oriented movements, ideology, political Islam, Salafi movement, Typology

Historically, Islam has always served as a vehicle for the expression of socio-political and economic dissent, particularly in times of crises. According to Ibahrine (2007), due to their agenda regarding state and society, Islam-oriented movements and/or Islamist movements have increasingly become assertive. In the context of the weakness of institutionalized politics, these movements have now turned to be the leading political opposition force or to play the role of governance in the case of PJD in Morocco, Nahda (Renaissance) in Tunisia and Muslim Brotherhood in Egypt.

Amaghar (2007) states, about three decades ago, that political Islam in the Maghreb was exclusively about Algerian and Tunisian variants. However, it seemed unlikely that Islamism could emerge in Morocco. He

also argues that Moroccan observers and political figures alike were firmly convinced that the king's political function – the commander of believers – stood as a shield to protect the country from this ideology. However, all that changed at the beginning of 1990s when Islamism burst upon the Moroccan political scene.

Morocco has a history of Sunni movements dating back to the end of the eighteenth century (Darif, 1988: 250). The Salafis were followers of a late eighteenth century reform movement associated with Mohammed Ibn Abdel Wahhab. During the twentieth century, the presence of the Salafi strand in the nationalist movement and the struggle for independence marked the orientation of the movement. This current was identified with the Salafi thinkers, such as Taki Dine Al Hilali and Allal Al-fassi. The Salafi movement advocated the return to the basic sources of Islam, the Qur'an and the Sunna. It stressed the religious identity of the national community and emphasized the need to sustain its authenticity understood as the Islamic religion.

The term 'Sunni' or 'Salafi' is widely used in Morocco to refer to those Moroccans who are "puritans" and claim they merely follow the practice and theology of prophet Mohammed's followers in the early time of Islam (Munson, 1993: 154). The Sunni movement (Al- Faqih Al- Zamzami and Mohamed Fezzazi in Tangiers and Mohammed Maghrawi in Marrakesh) is not organized in political groups.

One obvious aim of the Sunni is to increase the educational and moral levels of Moroccan people and to renew their understanding of Islamic spiritual activities. They are concerned in implementing Shari'a (Islamic Law) in a range of ritual and personal behavioral practices linked to worship and everyday behavior.

Another facet of the Salafi landscape in Morocco is the small but militant groups (Ibahrine, 2007: 113). The beginning of these new offshoots from Sunni groups dates back to about 1990s when veteran Mujahidins in Afghanistan returned and began forming small-size groups. Most of the small militant groups have been active mainly in poor sections of large urban centers, such as Casablanca, Fes, Sale and Tangiers where the famous preachers of the Salafi tendency were based (Ibahrine, 2007: 114). Asserting that Islam is not just a set of beliefs and ritual actions but a comprehensive ideology embracing public as well as personal life, they call for the implementation of Shari'a in all walks of life (Darif, 1992). They preached strict adherence to the founding principles of Islam. Among the key ideological concepts that place these groups in a different category than Islamist political movements, for instance, are the concepts of "Al- Jahiliya" and "Jihad". Muslims are called upon to pursue Jihad against rulers deemed to be apostate.

The previous discussion has just traced back the birth and the growth of Islamist movements, mainly apolitical Salafists and militants whereas the Islamist political movements that grow from a group to a party have evolved drastically as follows. According to Zeghal (2004), the Islamist movements are far from homogenous. Pluralistic by nature, Moroccan Islamism can be divided into two groups: The Party of Justice and Development (Hizbo al-adala wa- Tanmia, PJD) under the direction of Abdelilah Benkirane, and Justice and Charity (al- adl wal- Ihsan, JC) led by Mohamed Abbadi (Amaghar, 2007)<sup>1</sup>.

In 1969, Abdel Karim Mouti founded, with his associate, Ibrahim Kamal the Jamaat Ashabiba Al- Islamiya Al- Maghribia (hereafter, Shabiba), the Moroccan Islamic Youth Association in Casablanca (Munson, 1986). While operating clandestinely, Shabiba and its leader Mouti concentrated on recruiting followers, on structuring the organizational base and on socializing and educating members (Darif, 1992). Influenced by Sayyid Qutb, Mouti adopted many of the phrases, symbols and slogans of Qutb's political terminology (Darif, 1992: 228). The Qutbian discourse appealed to many high school and university students and to educated segments of the Moroccan society (Belal, 2012: 114). In 1972, Mouti obtained a legal status for Shabiba, as a religious and educational association. He emphasized that his organization was apolitical and thus using non-violent means to spread Islamic moral values among Moroccans (Belal, 2012; Darif, 1992). Later on, Shabiba declared in a manifesto that one of its most urgent goals was confronting Moroccan Marxism (Darif, 1992: 226). Because of the confrontation of the régime with the leftist in general and its Neo- Marxist elements in particular, the régime supported and approved the organization in the aim of counter balancing the forceful political influence and political relevance of doctrinaire Neo Marxism (Ibahrine, 2007; Tozy, 1999).

As the organization grew rapidly, the régime attempted first to contain and co-opt the leadership of the organization and second to defame the organization and liquidate it if it refused the régime's offers. In 1975, after the murder of Omar Ben Jelloun, the regime announced that a group of people belonging to Shabbiba were arrested for this murder. This incident was used to justify the régime's harsh measures against Sabbiba (Darif, 1992). Mouti left the country and was forced to lead the organization from abroad. In Belgium, he published *Al Mujahid*, a paper in which he increased his militancy and confrontational attitudes towards the regime by severely criticizing the monarchy and its policies. In the early 1980s, many senior members and activists formally withdrew or froze their membership (Shahin,

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<sup>1</sup> Abdeslam Yassine was the founder and the spiritual leader of the Jamaa till his death in 2013. Now the Jamaa is led by Mohamed Abbadi.

1997: 188). A small number of young members such as BenKirane, Baha, Yatim and Othmani became interested in the formation of a political organization or a party (Belal, 2012: 118). In 1983, they announced the formation of Al- Jama'a al- Islamiya (the Islamic community) and sought official recognition for their organization.

While seeking formal legalization, Al- Jama'a was urged to change its name and drop any reference to Islam. In 1992, it became Harakat AL- Islah wat- Tajdid (Movement of Reform and Renewal, or MRR). The rationale behind changing the old name is four fold. First, the movement intended to avoid misperceptions of the monopoly of Islam. Second, it reasserts that the organization is one Islamic movement among many. Third, the movement seeks to confirm the movement's readiness to cooperate with other political and social organizations. Finally, it wants to highlight the main focus of the movement activities, which is to reform the conditions of the Muslims by renewing their understanding of Islam (Belal, 2012: 119; Darif, 1992: 276; Shahin, 1997: 190).

Nonetheless, much attention was focused on political participation. The movement of Al-Islah wat-Tajdid articulated the demands of its constituency and ensured the political participation. In 1992, the leaders of the movement announced the creation of a new political party "Hizb At-Tajdid Al- Watani" (National Renewal Party, NRP) and applied for official recognition (Darif, 1999: 172). Although the group asserted that it did not monopolize Islam, nor did it claim to be its sole representative, the régime immediately refused to legalize the party (Ibahrine, 2007).

After failing to gain legal recognition, the party leaders were forced to seek fielding candidates in elections under the banner of officially recognized political parties. At the beginning, the MRR looked for a conservative party. After the failure of an attempt to infiltrate the Istiqlal party in 1993, it opted for a small and little-known political party, "Al-Haraka Shaabia Doustouriya Dimoqratiya" (the Constitutional and Democratic Popular Movement CDPM) of Abdelkarim Al- khatib. Thanks to this latter, the Islamists gained access to political field and formal politics (Willis, 2004).

Harakat at- Tawhid wat- Tajdid (Movement of Unity and Renewal, MUR) was the product of the realignment and the unification of MRR and Rabitat al- Mustaqbal al- Islami (the League of the Islamic Future) of Ahmed Raissouni. The movement adopted the new name MUR; it also built up a sophisticated organization run by a leadership apparatus in charge of overall strategy as well as a ten-member Majlis Ashoura (consultation committee) (Darif, 1992; Ibahrine, 2007).

The unification with the Rabitat al- Mustaqbal al Islamihas played an important role in helping the party (CDPM) gain widespread support among

young Islam-oriented educated Moroccans. In October 1998, the Constitutional Democratic Popular Movement became formally Al- Adala Wat- Tanmiya Party (Party of Justice and Development, PJD). As the president of the party, Al- Khatib, explained that the change of the party's name in terms of a new orientation rather than in terms of a new focuses on new issues of justice and development (Willis, 2004).

All groups and organizations that constituted Islamist movements have different and diverse objectives. While the non- political groups have no concrete political objectives, they have a number of goals closely linked to the religious and moralistic dimension of Islam. On the other hand, the Islamist political movements, which are the subject of this study, target the restructuring of state- society relations in the image of Islam's early golden years; others raised issues of equity and justice in open public discourse.

This historical overview helps use locate the subject under study and trace back its itinerary from an organization through a movement then to a party. Therefore, PJD, as an Islamist party, has gone through a metamorphosis to reach such a status. However, members of the party reject being labeled Islamists; they prefer instead to be called Islam-oriented movements.

The interaction of religion and politics in the contemporary period has been associated with the rise of Islamist movements in the Arab world since 1970s. During that period, Islamist politics came to be characterized by a diversity of actors, modes of action and objectives.

Islamist movements seek to reconstitute identities, institutional structures, ways of life, and the moral code of society through participating, influencing, or controlling cultural, educational and economic spheres (Yuvuz, 2003: 23). The rise of Islamist movements signaled the return of Islam as a rallying cry for socioeconomic opposition to the central authority. Those movements felt not only their economic welfare but also their traditional institutions and values under threat (Burgat, 2003). The movements are diverse in their activism because they can either be directed against the state or demand state power (Offe, 1985). In addition, they can shift from targeting the state to targeting society and everyday life or social codes (Cohen, 1985; Melucci, 1996; Touraine, 1981).

Nonetheless, Islamist movements did not deny engagement with the state, a denial that is built in the definition of "new social movements" by Alberto Melucci (1998) and others. In other words, Islamist mobilization was characterized by a contingent on everyday life before becoming ready to deal with the state (Tugal, 2006). According to social sciences, an Islamist movement is a social institution that has its own role and mobilization tools. These latter determine its goals, its political and/or ideological roots (Okacha, 2008: 8). Islamic political movements articulate complex social

and economic issues and concerns. They rely on religious circles, an institutional network where its repository of Islamic symbols frame social and political issues, to disseminate its ideas and articulate a new set of blue prints for the reconstruction of state and society, individual faith, and community (Yuvuz, 2003: 35). Hence, several Islamist movements' typologies have been cited in the literature; yet, we mention some that serve the research goals.

According to Salwa Ismail (2003), Islamist actors can be classified, largely, into militants, conservatives and moderates. Each of these groupings tends to be characterized by particular social origins and modes of action. Broadly speaking, militants originate from lower-middle-class background. They have social and economic concerns at the heart of their agenda and have used violence as a means of action. Conservatives and moderates belong to middle classes with professionals as their main supporters. Whereas conservatives focus on morality issues and seek the Islamization of society and state institutions but not a take-over of political power, moderates attempt to work within the institutional channels of participation (Ibahrine, 2007).

In regard to Islamist movements with political inspiration, other scholars (Darif, 1992 and Entelis, 2002) distinguish between three different categories of contemporary Islamist movements: the radicals, the reformists and syntheticals. These three broadly defined types have different understandings of political and religious changes in the Moroccan context as well as different strategies to pursue their goals. This typology is based on a typology developed by Entelis (2005) and a typology elaborated by Darif (1992).

**Radicals:** They are those who adopted the term of Al- Jahiliya<sup>2</sup>. They argue that both the state and society have become un-Islamic. To re-Islamize the state and society, they use political violence and political assassination understood as Jihad. They do not tolerate "gradualism"<sup>3</sup>. They operate most of the time underground and are organized clandestinely into cells and networks (Ibahrine, 2007). Salafiya Al- Jihadiya serves as the paradigmatic example in Morocco.

**Syntheticals:** they reject the official interpretation and practices of Islam. Theoretically, they accept the democratic principles but refuse the participation in all aspects of the Moroccan society, except institutionalized

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<sup>2</sup>. Historically, the age of pre-Islamic 'ignorance' associated with polytheism. It shows the lack of guidance of the community prior to the revelation of the Koran. For modern Islamist movements, the term can also refer to the situation of unbelief and corruption that characterized contemporary societies worldwide. (Volpi, 2011)

<sup>3</sup>. It is the policy of seeking to change something or achieve a goal gradually rather than quickly or violently, especially in politics. From the Free Dictionary by Farlex

politics. Political change is not their ultimate target. They believe that political change must be the outcome of a "bottom-up" strategy of acculturation, socialization and education (ibid). In addition, strict religious education is at the center of their educational program.

Reformists: Educationally well-equipped, they want to transfer power by democratic procedures, including political organization, mobilization and participation. They totally reject violence as a means for bringing political and religious transformation. Unlike radicals, they refuse to work underground. Al- adala Wat- Tanmiya party or PJD (previously Al- Jama'a Al- Islamiya, the Islamist group) and Harakat Al- Islah wat- Tajdid Al- Maghribiya, the Moroccan Movement of Reform and Renewal, Harakat Al- Badil Al- Hadari (the Movement of Civilizational alternative), and Harakat Min Ajli Al Umma (the Movement for Nation), may serve as an equally illustrative type.

However, there are some Islam-oriented groups, which remain politically marginal in Morocco (Ibahrine, 2007: 111). These groups evade political dimension in their expression and their activities, and thus, advocate no political agenda. Their religious activities focus utterly on Da'wa. They accept the existing religious establishment and do not question the religious legitimacy of the monarchy; nor do they defy the official religious institutions. Jama'a at-Tabligh wad- Da'wa is the typical representation of non political Islamist movements.

Okacha (2008) differentiates between two types of typologies. The first takes into account the movement's goals. In this respect, there are movements that seek Da'wa (proselytizing) such as (Da'wa wat- Tabligh), and others who target politics like PJD and Al'Adl wa- al Ihsan. Within this typology, Okacha distinguishes between three different categories: revolutionary, participatory and left-oriented. The second typology is characterized by the mode of mobilization: they are either radical or moderate. In Morocco, the radicals are scarce and represent a minority, such as the Wahabbi Salafists and some militant groups such as Salafia Jihadia (Okacha, 2008: 47).

All the aforementioned typologies agree on the fact that Islamist movements are either radicals or moderates. However, they differ in labeling the third category such as syntheticals, conservatives and non-participants by Darif, Ismail and Okacha respectively, though they refer to the same category.

Table 1. A synthesis of Islamist movements' typologies (It is mine)

<b>Darif</b>	<b>Ismail</b>	<b>Okacha</b>
Radicals	Militants	Radicals
Syntheticals	Conservatives	Non participants
Reformists	Moderates	Moderates

Last but not least, many definitions have been used in the literature to define different trends among Islamism: moderate vs. radical or extremist, reformist vs. revolutionary, peaceful/civilian vs. violent or armed movements. While moderation and radicalism are by definition subjective and cannot be easily defined, the reformist-revolutionary divide could also be misleading in an authoritarian context and is likely to change over time within the same movement. This idea is of paramount importance in this study because it will assist my investigation into PJD's itinerary in quest for power.

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# LEGAL ISSUES ASSOCIATED WITH NEPOTISM IN THE WORKPLACES IN THE SLOVAK REPUBLIC<sup>4</sup>

*Jana Žuřová, Assistant Prof., JUDr., PhD*

Pavol Jozef Safarik University in Kosice, Faculty of Law, Slovakia

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## Abstract

This paper provides a new approach to the conceptualization of nepotism during the performance of the wage labour, which is, in the conditions of the Slovak Republic and in the environment of the labour market, established as an “unwritten rule”. The starting point is an understanding of nepotism as a form of preferential selection of employees, in which family members are preferred. We analyze the legal regulation of two of the most frequent forms of nepotism: i.e. 1) appointing family members to public offices (public sector) and 2) employment of family members in so-called family businesses (private sector). The differentiation of nepotism regulation in the public and private sector has been chosen as a criterion for research of legal aspects of nepotism. Legal regulation is different and understandably stricter within the public sector, but as we argue in the paper, its real effectiveness in the Slovak environment is very weak.

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**Keywords:** Nepotism, anti-nepotism, pro-nepotism, public office, family business

## Introduction

Nepotism (from the Latin word „nepos“ =nephew) means preferring and giving preferential treatment, in strict sense of the word, to family members and in broader sense of the word also to friends and acquaintances for various positions. Some authors separate the second aspect of this term and they refer to the preference of friends and acquaintances as cronyism (Pearce, 2015). Most frequently, it is the appointment of the affined people to public offices and job positions. In its nature, it is a type of a social bond, which is referred to as unjust, unethical, immoral, and ineffective for

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<sup>4</sup>**Acknowledgment:** This paper was published under the frame of scientific agency VEGA, research project No. 1/0805/13 “Optimization of labour-relationship model on the labour market in Slovak republic”

organizations, and has been noted to create specific types of conflicts of interests that distorts the principle of equality (Jones, Sttout, 2015). Specifically, broad possibilities of the rise of personal and public conflict of interests are provided by the public sector (in the Slovak Republic the performance of work in the public interest and public administration). Nepotism and preferential treatment of family members in filling public offices has a negative effect, which threatens the public's trust in the public sector. Negative effects on the morale of society and negative economic effects have been proven when large family clans take over public functions, which results in the distribution of public resources to other relatives or other affined parties (David, Nett, 2007). In this sense, the nepotism is an example of indirect corruption behaviour.

In order to avoid these problems, the majority of countries have adopted a so-called anti-nepotism policy, which prohibits, in certain forms, the employing family members in public positions. Slightly less developed is the legislation of individual countries in relation to the anti-nepotism enforcement in the private sector, which is controlled by the principle of contractual autonomy (Janičová, 2006). The approach where the policy of anti-nepotism in the private sector is not regulated on a national level, but rather based on the contractual autonomy left up to the will of the employer, has certain risks. The rules of anti-nepotism applied by the employer, such as prohibitions on employing married couples in the workplace, sanctions for a romance between colleagues, etc. are disconcerting, because they can easily threaten the employee's right to privacy, marriage, family, and intimate life (Rabin Margalioth, 2006). There are also examples where the employer, by applying these policies, has committed a discrimination based on sex (Gutman, 2012). In the majority of cases, it's especially women who give up their job, in the event they cannot work together with their husband in the same workplace due to the anti-nepotism rules.

In the first part of this paper we present the legal characteristic of valid rules of anti-nepotism in the public sector and we subject them to critical analysis. In the second part of the paper, we explore legal aspects of nepotism in the private sector with particular emphasis on its most frequently occurring form, family businesses. We focus on the legal regulation of a mutual employment of married couples and other relatives, in which we can find even an element of pro-nepotism as a rule, which supports the employment of family members.

### **Legal aspects of nepotism in the public sector**

In the course of performance of the work in public interest in the Slovak republic, it is prohibited to employ employees who are relatives and employees and individuals performing public functions who are relatives, in

mutual direct subordination or superiority or so that the one would be subjected to accounting controls or financial controls of the other (§ 7 of the Act No. 552/2003 Coll., on the work in the public interest, as amended, hereinafter referred to as the Act on the work in the public interest). Similarly, based on provision § 30 of Act No. 400/2009 Coll. on the State service as amended (hereinafter referred to as Act on the State service), the state employees, who are relative persons, cannot be assigned in the mutual direct subordination or superiority or so that the one would be subjected to accounting controls or financial controls of the other. Stated restrictions on employing relatives in the public sector do not apply to employees of representative offices of the Slovak Republic abroad, or employees who have only one managing employee, which is a statutory body. If the employer has only one managing employee, who is simultaneously a statutory body, relatives can be assigned in the mutual direct subordination or superiority or so that the one would be subjected to accounting controls or financial controls of the other. Based on the first definition, a relative is a relative in direct relation (i.e. grandfather – father – son), sibling, or spouse. Based on the second definition, a relative is a person, where in the case when other people in family relations or similar relations are close enough to one another, that if one person suffered harm, the other one would justifiably experience it as its own. An undisputed positive of the Slovak policy of nepotism and paradox at the same time is the fact that not only filling of public offices by relatives, based on blood relations and family relations established by marriage is restricted. Based on the second definition, a relative can also be a homosexual partner of the employee, so it prohibits their mutual employment in the relation of subordination or superiority. On the other hand, there is the broadly known resistance of the Slovak society against acknowledgement of any rights for cohabitation of same-sex couples or in even the legal acknowledgement of their cohabitation. (Žul'ová, 2014).

However, the real efficiency of the Slovak policy of anti-nepotism in relation to an effective solution of this issue is very low. Observations of the prohibition of employing relatives in only two lines (1) mutual direct superiority or subordination, (2) accounting control and financial control, does not prohibit the appointing of relatives to other lucrative positions. Limiting the prohibition of employing relatives to a circle of family members (see the definition above) makes it easier to employ a broader circle of relatives in the sideline – cousins, brothers-in-law, sisters-in-law, and fathers-in-law. Relations through the sideline may meet the criteria of the second definition of relatives, but only after proving that if one of these persons were to suffer harm, the other one would justifiably experience it as its own. To claim the opposite is much easier than to bear the burden of proof of fulfilling the characteristics of a related person, based on the second

definition. The formal prohibition of employing in mutual superiority or subordination is also very easily circumvented. Infamously known is the case of a mayor of a Slovak village, who in the interest of preserving the job position of his wife, purposefully appointed the head of the local authority to the office, on a part time basis, who thus became her formal superior.

In relation to the prohibition on assigning employees in the mutual direct subordination or superiority or so that the one would be subjected to accounting controls or financial controls of the other, the Act on the State service established a “preventive „mechanism, where the citizen applying for the state service position is obliged to inform the service office of these relevant facts. The state employee commits to notify and inform the service about these facts even in cases when they arise during the performance of the state service. The notification duty does not apply to relations in all of their scopes; only in cases where a relation of a direct subordination or superiority, or accounting and/or financial controls, would arise in the workplace by assigning the relative thereto.

In regard to the ineffective rules of anti-nepotism in the Slovak public administration, it is necessary to point out the ongoing non-existence of termination of employment, due to the fact there is an illegal work relationship among related people. The obligation of the employer is to perform a legally relevant restitution action, which, pursuant to the Slovak legislation, can be an assignment of the related employee to another job, but an explicit cause of termination of the employment is missing. Regulation of the anti-nepotism rules is also missing, in the event the family members are employed in mutually subordinate institutions (Nemec, Pirošík, Slimáková, 2001).

After all, it is necessary for the legal regulation to eliminate one more manifestation of nepotism. Any hiring of an employee who is related to someone within the organization structure of the employer is also oversensitively viewed as nepotism. One of the first studies which dealt with the consequences of nepotism for the recipient of the advantage (family member, which succeeded in the selection process) confirms the results that their success is always attributed more to their political capabilities and relations to higher management and less to their skills, effort and education (Padgett, Padgett, Morris, 2015). Family members bear a stigma of negative perception of their relation as an advantage, which helped them in the selection process to get the public office or job position, irrespective of their actual qualifications, capabilities and skills. In our opinion, the above stated imperfections of legal anti-nepotism rules in the Slovak republic shall leave the legal basis and seek the institutional solution. Objective selection of public administration employees, based on binding ethical principles and meritocracy could be made by, e.g. an independent institution.

### **Legal aspects of nepotism in the private sector**

Nepotism in so-called family businesses is viewed more naturally, although not positively. The owners of family businesses frequently establish these within marital or sibling relationships and expect their descendant or relatives to be continuators of the family business. Family business and expectations related to their operation are based on the cooperation of the bearers of the same genes. The more genetically close the people (parents – descendants, siblings) the greater the willingness to cooperate, irrespective of the risks related to given cooperation (Nowak, Highfield, 2011).

In many countries, the culture, practice or even legal regulations do not explicitly prohibit the cooperation among relatives within individual workplaces. It is up to the employer to what extent he will start the “family cooperation „in his workplace. While in the case of nepotism in the public sector, the normative measures of the Slovak Republic are focused explicitly on countering it, in the private sector, one may find also legal standards for its support, i.e. one may speak about legal standards of pro-nepotism (Gutman, 2012). The Slovak Republic is one of the countries, which allow concluding employment relations between the husband and wife since 2003. Until then, the Act No.311/2001 Coll. of the Labour Code as amended (hereinafter referred to as Labour Code) explicitly prohibited the mutual employment of spouses. According to the applicable legal regulations (Act No. 82/2005 Coll. on Illegal work and illegal employment), husband/wife can be gainfully employed for one another even without the employment agreement. The cumulative conditions for the work of husband /wife without employment grounds in order not to be considered as illegal employment are: e.g. 1) pension insurance or drawing the pension benefit by the husband/wife and ad 2) performance of work for a natural person, which is an entrepreneur. According to the legislation of the Slovak Republic, a relative other than husband/wife can perform work for the employer – natural person without signing a contract only if it is a relative in direct descent, though the relation can also be established by adoption. Relatives in the sideline include only siblings, irrespective of the fact whether they are a step or natural sibling (whether they have one common parent (half siblings) or they have common both parents (siblings)).

The employment of other relatives in the sideline like, cousins, uncles and nephews shall be realized on a contractual basis.

In comparison, Czech Republic belongs among the countries that prohibit mutual employment of spouses. The prohibition of establishing an employment relationship between husband and wife in the conditions of the Czech Republic relates only to employers, who are natural persons. It is possible for the husband to employ his wife (or vice versa the wife the husband) in a company even though he himself, as the statutory body of the

company, would sign the employment agreement with her. In such cases, the employment relationship is agreed not between the husband and the wife, but between the company and the spouse, which, from a legal standpoint, is a different subject than the husband/wife. As an essential argument why husband and wife should not be allowed to establish employment relations is the subordinate principle, because this characteristic sign of each employment relation comes into contradiction with the family law principle of equal position of the man and woman in marital relations (Macková, 2012). Superiority of the employer and subordination of the employee plays a key role amongst other identifiers of wage labour, or for the identification of who is the employee and even the Court of Justice of the European Union uses it as one of the main elements with the aim of providing a definition of an employee for the purposes of free movement (Dolobáč, 2012). However, in our opinion, the relation of subordination of an employee in the employment relationship towards the employer cannot be a priori excluded only because of the fact that the employee is in a marital relation to the employer.<sup>5</sup> Another troublesome aspect listed as a barrier for mutual employment of husband and wife is the respect of the work performance of someone else, i.e. “on someone else’s account“, when the married couple usually works in a regime of undivided co-ownership of spouses. The existence of the undivided co-ownership of the married couple causes the fact that the husband – employer uses financial resources, which are part of the undivided co-ownership and further remain part of the undivided co-ownership, to pay the wage. Even according to the Spanish science of the Labour law, working on one’s own account is outside of the scope of the labour law (Megino Fernandez, 2014). However, in our opinion joint ownership itself does not exclude the performance of work between a husband and a wife from the scope of the labour law. The undivided co-ownership weakens the identification of the attribute of performing work for someone else, but several of its aspects are still upheld – e.g. economic risk of the activity is still borne by the employer and he also bears the legal responsibility for the result of the work. We also agree with the opinion that the prohibition of employment relation between spouses has no grounds in the present anti-discrimination legislation, which in the Czech Republic, but also the Slovak republic, explicitly states the prohibition of discrimination based on marital or family status (Borská, Světlíková, 2015).

Whether the employer decides to employ his wife or not, he should not be prohibited by the legislation to do this.

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<sup>5</sup>**Acknowledgment:** Decision of the Court of Justice of European Union from 08. & june 1999 in the case of C-337/97, C.P.M Meeusen proti Hoofddirectie van de InformatieBeheer Groep. p. 17.

## **Conclusion:**

Nepotism is an issue in every society and no country is completely immune from it with respect to its natural occurrence due to human nature (Bayley, 1966). Although this form of approach towards public offices and job positions was natural in the past (Sidani, Thornberry, 2013), currently it does not comply with the democratic way of the power organization and therefore, is subject to restrictive legal regulation, especially in the public sector. Because of several issues, which we have analyzed in the first part of this paper, the real efficiency of the Slovak policy of nepotism, in its relation to being an effective solution to this issue, is very low. The private sector is controlled by the contractual autonomy regarding these questions in the legislation of the Slovak Republic. It allows for mutual employment of spouses and other relatives, which does not create any formal barriers to a family business. On the other hand, the employer who wants to avoid issues related to nepotism (Stewart, 2003), the Slovak system of law does not prohibit him in restricting the employees from creating personal and intimate contacts in common workplace by means of internal company standards. The only barrier, the employer has to respect when executing the policy of anti-nepotism, is the prohibition of discrimination based on marital or family status and human dignity of each employee (Barinková, Žofčínová, 2013).

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# **FAMILIES DIVIDED: THE PLACE OF THE FAMILY AND WOMEN IN ZIMBABWE'S FAST TRACK LAND REFORM PROGRAMME**

*Nyawo Vongai Z.*

History Department Midlands State University

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## **Abstract**

Events in the last decade around the land question in Zimbabwe and the broader political contexts in which they have played out have been dramatic and transformative around the family fabric. The political history and the political economy continue to mould the quality of life for most families in significant ways. Human beings have always lived in families from the beginning of time. The family is a pillar of society as it influences the way society is structured, organized and functions, yet the Fast Track Land Reform Programme of 2000 in Zimbabwe came with disruptive tendencies to the family fabric and disadvantaged especially women. This paper targets the notion of split households as families spread their risk through maintaining dual farming households as fall back plan if ever they were evicted in one farm. The research set out to establish the nature and extent of split households resulting in increased insecurity for the family unit, some women and their children. The study also examined how new farmers have invested in new marital and cohabitation relationships in order to manage split households as well as how the structure of the family as it stood in the fast track exposed women to challenges of all kinds. Desktop research and also interviews were carried out with members of families that split as well as with citizens who witnessed the Fast Track Land Reform Programme (FTLRP). Recommendations are that the government should carry out a programme that campaigns for the promotion of family values, for families that were split by the land reform to get back together or restore the traditional respectability of the family.

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**Keywords:** Family, fast track land reform, split households and women

## **Introduction**

The FTLRP of Zimbabwe has undoubtedly significantly addressed the racially-based land injustices which emerged and were consolidated under colonialism and which were perpetuated during the first two decades

of independence. However, crucial questions arise around other (unresolved) dimensions to the land question in Zimbabwe, (Bowyer et al 2005, Worby 2001). One significant dimension is gender, is that women's relationship to land has been mediated through men. Though less overt than the racial structuring of land relations in colonial Zimbabwe, patriarchy was intrinsic to colonial land dispossession and became embedded in the resultant agrarian structure, (Ranger, 1983; Gaidzanwa 1988, 1995; Moghadam 2004; Yacouba, 1999) . Historically, 'race' was invariably articulated as the key signifier for land in Zimbabwe and fast track over the past decade has sought to undermine the racial agrarian system. Be that as it may however, the fast track land reform programme has had little regard for the family fabric and this has led to the manifestation of various social problems in the country that had a direct bearing on family life.

No single definition of the family can be given as it differs context to context. Sociologically, the family is defined as a group of interacting persons who recognise a relationship with each other, based on a common parentage, marriage and/or adoption. The functions of families vary between different societies and there is no central function that all societies grant to the family (Ross, 1968 cited in Turner, 1999). In this paper family is both nuclear and extended.

## **Background**

Rural women's lives in Zimbabwe have been distinctively tied to the land, but this relationship to the land has historically been mediated through male entitlement and control involving the institution of marriage and the allocative powers of mostly traditional authorities, (Chidzonga, 1993). Women in the fast track suffered the same fate. Rutherford (2001), as well as MacFaden (1996, 2002b), note that the gendered aspect of land allocation appears remarkably consistent (cutting across colonial and post-colonial Zimbabwe) and is marked by rigidities, becoming one of those modes of power that sustain "women" as a category. Fast track must be understood in terms of the failures of land reform historically and in relation to the political crisis that emerged in the 1990s. Certainly, the programme is a manifestation and eruption of problems that have been simmering during the 1980s and 1990s, it is a catharsis, an eruption of too many things gone wrong.

Shortly after the results to the referendum were announced, war veterans of the Second Chimurenga began invading white-owned farms in spontaneous demonstrations which soon had the support of the government (Chitsike, 2003). In years that had passed (1998 and 1999), sporadic invasions of commercial farms by communal and other farmers took place, which the ZANU PF government on the whole denounced them as illegal, (Nyawo 2012). The nationwide land occupations starting in early 2000,

which led initially to arrests and detentions of occupiers, was soon legitimised by the government, and regularised and normalised through the Fast Track Land Reform Programme.

The government put in place emergency legislation to protect the new settlers from eviction. Any occupiers would only be moved once alternative land had been identified for resettling them. After the June 2000 elections, the President appointed what was referred to as a War Cabinet whose major thrust was to see the completion of the land reform exercise (now dubbed the Third Chimurenga or war of liberation) or jambanja (on the streets of Zimbabwe). What then followed was a comprehensive and holistic approach towards acquisition of commercial farms that were quickly subdivided into A1 and A2 modes, (Nyawo, 2012). The existing owners (i.e. commercial farmers) were given a time limit (according to a revised Land Acquisition Act) to vacate their land. Individual Zimbabweans with a serious intent to farm were invited to submit applications for land to the Ministry of Lands, Agriculture, (Chaumba et al, 2003).

Fast track is said to have involved the ‘first radical shift in agrarian property rights in the post Cold War world’ (Moyo and Yeros, 2005a:3, 2007). In its own way, fast track became the solution to the land issue that the government had been haltingly seeking since 1980. In fact, in 2005, just five years after the beginning of the Third Chimurenga, the government of Zimbabwe was so buoyed by the extent of redistribution that it declared that the land question had been finally resolved. Launched on 15 July 2000, the fast track programme has become a watershed event in the history of Zimbabwe as it radicalised the land reform process and had in its own right prompted a lot of debate.

The main objectives of the fast track programme were to ensure food security, decongest communal areas and decrease pressure on land, increase employment and ease existing political pressure, (Moyo 2004, 2005). It is significant that the objectives of fast track land reform do not include the resettlement specifically of women, although fast track documents indicate that women were to receive 20 per cent of the land. Eventually by 2013, women had benefitted 12 per cent of the 20 per cent, (Nyawo 2013).

In terms of fast track beneficiaries, the selection process was undertaken primarily by the Rural District Councils (RDCs) and District Land Committees (DLCs); although many informal processes also were important. The patriarchal character of these institutions (at least in terms of being male dominated) disadvantaged women in the selection process. Issues of sexual harassment, sexual favours and gender violence against women were also visible. Some accounts indicate that women seeking allocation of a plot under the fast track scheme have been forced to exchange sexual favours to get on the redistribution lists and that war veterans and ZANU-PF militia

members raped women in the course of the land occupations (Human Rights Watch, 2001; Goebel, 2002, 2005a, b, c; Chingarande, 2004, 2006, 2007, 2008, 2010; Chingarande et al, 2012). The sources of this gendered inequity in land allocation under fast track relate to a number of constraints faced by women in applying for land, including bureaucratic constraints, gender biases amongst selection structures (which compromise mainly men), lack of information on the process, and poor mobilisation of women's activist organisations around the issue of applications (Moyo and Yeros, 2007; Jacobs 2000, 2001, 2003). Bottom line, women faced a lot of challenges even within their families in the fast track era.

### **Statement of the Problem**

The family is under threat and unable to play its critical roles of socialisation, nurturing, care and protection effectively, due to failures in the political economy, the legacy of colonialism, bad governance as well as various societal forces, such as high levels of poverty and efforts to reform. The fast track land reform has also kept the family in Zimbabwe under siege and has disadvantaged especially women. In addition, there is a disjuncture between the idealisation of the family and the cherished beliefs about what families are and should be and the reality points to the deterioration of the family. The paper sought to bring out the challenges that the family encountered as a result of the implementation of the fast track land reform in Zimbabwe.

### **Findings**

Research in the area has indeed confirmed the vulnerable nature of the family. The family, because of the fast track land reform programme, is facing various challenges which undermine its ability to function optimally. For instance, the violence that drove the fast track land reform was as though people do not hail from families where they are taught love for the other and compassion. Through socialization in the family children are taught to be tolerant of views other than their own and become active and responsible citizens in the future. Non-discrimination, mutual obligation and respect for diversity guides Government and other stakeholders in the manner in which they interact with families, (Steward et al, 1990), but all this was thrown out of the window during the fast track for even women were beaten up by young boys in full view of the police.

Colonial conquest and exploitation weakened the African family on two key fronts, (Ranger, 1983). Number one, enforced labour migration compelled families to live apart. In the same manner the fast track has separated family members given its chaotic manner of implementation. Members were thrown hither and thither as they tried to rush and occupy any

land they could grab. Second, the policies, laws and practices of colonialism were aimed at impoverishing African families, which also had dire long-term consequences for them (Goebel 1996, 1997). In a similar fashion, at its inception, the fast track was anti-property, it opened up spaces of vulnerability to hunger, immorality, unemployment to the farm workers, southward drift into South Africa, capital flight, food insecurity and the list can be longer. What was worse about the fast track land reform was the timing coming within what Sachikonye (2013) has called the lost decade 2000-2010 or the Zimbabwean crisis 2000-2005 according to Mlambo (2005) the programme could not have failed to worsen matters for families and mostly for women.

## **Discussion**

To start with, one major problem faced by women who remained in the communal areas was the absence of able-bodied men in African villages or communal lands, which greatly undermined the extended family in many ways. It also meant that only women and the elderly were in a position to play vital roles in meeting the needs of the family causing switched roles. This arrangement placed a significant burden on women and contributed to the phenomena of female-headed households and absent fathers, to this today, (Nyawo, 2013). For generations, it was migrant labour system which was known for continual undermining of the African family and creating conditions for its disintegration.

In a number of cases as this research found out, women who remained in communal areas doubled as fathers of households. They now had to herd cattle, cultivate land with ploughs, cut firewood with axes, go fishing and even hunting for small animals to feed the family. These chores, things being equal, are men's responsibilities. These women would also stand in as care givers, nurses and doctors to the elderly who remained in the village. The fast track land reform programme attracted able bodied young men who were adventurous and had energy to start a life, a new homestead and with a future to forge fresh relations. As such, their services were removed from the communal areas which had seen them grow, removing them from offering some cultural or traditional responsibilities. For instance, in the Zimbabwean culture, a young brother can be tasked (secretly though) with making a brother's wife pregnant if the elder brother has no fire (*kupindira maiguru*). With the youthful ones gone, the real status of the elder brother's barrenness was exposed and the shame would be suffered by the women. Coming also from the interviews was the fact that with young adults due for marriage chasing after pieces of land, ripened girls in the village remained with no suitors, delaying their marriages and turning them in some cases into prostitutes, *tsikombi* / overgrown brides.

Notwithstanding the abovementioned, the family is still a dynamic unit of socialisation that has not remained static. It is characterised by changing patterns of socialisation and interaction. The character and form of the family have evolved and still continue to do so – from the onset of colonial rule to the present democratic dispensation and an increasingly globalised world, (Gaidzanwa, 2000). Although Zimbabwe has experienced consistent economic growth in the past decade, the onset of the lost decade/Zimbabwean crisis, according to Sachikonye (2013), from 2000 threatened the country's economic growth and by extension the family fabric. Industries were either closed down or had to reduce their workforce scattering family in an unprecedented manner. The loss of hundreds of thousands of jobs meant that many families were facing a grim future, due to lack of income and yet life had to go on.

Human beings have always lived in families from the beginning of time. The family is a pillar of society, as it influences the way society is structured, organised and functions. The family remains central in the lives of its members, from birth to death, and provides them, among others, with psycho-emotional and economic support. The family has been and continues to be the principal institution in society, playing a vital role in socialisation, nurturing and care, as well as determining the conditions of social reproduction. The family derives its meaning from being both a biological and a social unit and continues to be a cornerstone of human civilisation, because of its ability to transmit society's values, norms, morals and mores.

Sadly however, the onset of the fast track land reform was chaotic, disruptive to the family and fast as denoted by its name, (Nyawo, 2012). To begin with the movement of people in a disorganized manner meant that family was not around when one got beaten up, mobbed, raped, was infected with deadly diseases, got verbally abused, felt hungry or was even killed. Family support had no chance or place where individualism and brute force seemed to be the order of the day. At least during fights for prime cuts of the land men would stand their ground, most women ended up losers, beaten up, raped, displaced and destitute or ended up in some marriage of convenience to be 'protected.' Interviews showed that a number of women ended up eloping or cohabiting with men who never really married them in the African manner of going through the aunties and paying lobola. The girls or women would end up not marrying *vematongo* as the Zimbabwean culture would recommend (marrying from the neighborhood, among people whose culture and practices would not be strange to you).

Although in various parts of the world, the structure and content of the family have undergone changes over the centuries and is continuously changing and adapting to societal and global transformations the fast track brought with it changes that were too rapid, anti-family and strange in a way.

Social phenomena are also constructed and given meaning in the family environment, for example, the concept of marriage, the bearing and raising of children; religion, governance, authority, the value and importance of education and the rule of law, (Goebel, 1999). Responsibilities and obligations to both family and community members and society in general are also defined within the family milieu. When individuals eventually leave their family and enter other settings, such as school and the workplace, the family would have already prepared them for the transition. The former can only transpire within a family that has the capacity to execute its roles and responsibilities in society. In the main, a strong family, as opposed to a weak one, is able to achieve this competently. The fast track divided the family for various reasons weakening its capacity to function fully.

Examples of a disruption of this ordered family fabric can be drawn from interviews where women who cohabited with men in the resettled areas articulated how the men did not permit them to visit their elderly and sometimes ailing parents back in the communal areas. One woman said that each time she asked to visit the village the man would always cite the volume of work at hand or lack of money as an excuse. That means cohabiting men removed themselves from taking responsibilities with in-laws. Beyond not paying lobola, they emotionally tormented their partners. Some women ended up being disowned by their families because they no longer actively participated in the up keep of their elderly folks in the village, in other words they no longer belonged.

The concept of marriage itself changed face in the fast track land reform programme of Zimbabwe. Cohabiting, prostitution and fathering of children out of marriages was on the increase and worse in the era of HIV and AIDS. To begin with, in Zimbabwe, for marriage to take place families of both the groom and bride should be completely aware, involved and should give their blessings. In the fast track, there was a fast tracking of all these procedures and in the process most arrangements between groom and bride went unannounced. The payment of lobola which is a token of love and commitment and central to this bond was never honored in most cases resulting in an increase of cohabitation cases. Given that laxity, men got an opportunity to take anyone of their choice at anytime even cross generationally increasing chances of being infected or spreading HIV and AIDS as well as other such diseases. The HIV and AIDS pandemic is at the heart of the crisis of dividing family during the fast track land reform, (Oxfam international, 2000). The pandemic rocked families through decimating resources accumulated by family, draining the human resources base, demoralizing family, introducing vulnerability to poverty, food insecurity and risks of all kinds. Oxfam International (2002) notes that, there is a clear and critical two-way relationship between HIV and food security.

The pandemic is driven by poverty and hunger that then drive people to adopt risky coping strategies in order to survive. These coping strategies included travelling in search of food and additional sources of income, migrating, engaging in hazardous work, and, more deadly, women exchanging sex for money, land, food or other favors. These actions facilitate the spread of HIV and AIDS, putting individuals at risk of infection, especially those in the vulnerable group, women and children.

This research found out that HIV and AIDS increasingly and disproportionately affects women and adolescent girls as what happened especially in the chaotic fast track land reform of Zimbabwe. Oxfam international (2002) observes that traditional power relations between men and women means women are less able to negotiate concerns about sexuality and are therefore less able to protect themselves from the risk of infection. Women and girls are at high risk of coercive sex and violence and even forced abortions. The situation is compounded by the stigma and discrimination faced by women living with HIV and AIDS, who often face eviction from their homes if they disclose their status. The fast track land reform of Zimbabwe recorded an increase in new infections with HIV and AIDS an indication of the disorder that the reform ushered. Women suffered more since, if they were not sick themselves, they were care givers who ended up infected themselves. Where they were patience themselves they were faced with double trouble, being chucked out by those they cohabited with, having to walk long distances for medicines, lacking family support, experiencing debilitating poverty and sometimes even falling pregnant. As such, those women who found themselves in such a situation were reduced to a life of destitute with no means of improving themselves meaningfully.

In her research on women in Mwenezi District of Zimbabwe in the fast track era Mutopo (2015, 2014, 2011) observes that women benefited on their husbands's pieces of land and managed to grow vegetables such as tomatoes, bean and peas to sell in South Africa and bought food for the family. While the family's food was put on the table, the women were vulnerable as they travelled to sell in foreign lands. They were sometimes robbed, raped, denied what was due to them. For some women, going to South Africa to sell made them to find other jobs and they stayed longer until xenophobia caught up with them. The burden of going to sell has reduced women to be on the move all the time carrying manually loads that destroy their bodies gradually. Such women today look older than their age because of the labour they have endured. While the act of going to sell to get food for the family is a plus in bringing the family together it also has adverse factors. For instance, one interviewee articulated that some women have been accused of running affairs in South Africa and have since been disowned by their families. Others have found their husbands cohabiting with other

women back home alleging that their wives were always away and were not yet ready to be wives who know their conjugal duties. Thus, in this regard the benefits of the fast track to women have been bitter sweet. The women have been left confused on how they should contribute to benefit their families since entrepreneurship has caught them trouble, (Chitsike, 2000).

A strong family has particular features which enable its members to contribute meaningfully to their own development and prosperity, as well as the betterment of society. Sociologists concur that a strong family usually has access to different kinds of resources, ranging from emotional and material to spiritual resources, which enable it to meet the needs of its members. Where resources are concerned, the fast track was one programme that was not for those with baggage to carry. Its manner of implementation was such that those with little or no property moved faster and were first on prime pieces of land. In fact, some people sold their property to travel light. Also, the pole and dagga huts that those who occupied land were asked to build for themselves were too small, too temporary and too hurriedly built to be able to contain meaningful property. That lack of property would come back to haunt the new farmers once they got settled. The dagga huts by their very nature housed a few individuals, lacked privacy, introduced monotony into people's lives. The worst affected by this scenario were women, they lacked space to order the home, cook and care for the family and even private space with their man. They were also almost always at home if they were not working on the land, unlike men who went out drinking or hunting with friends or even went to loiter at the townships. At the dagga hut where the woman remained 'prisoner', there was no entertainment of any kind and even floors were a luxury. Most floors were just sand or cow dung and these had their own kind of hazards.

A family also demonstrates commitment to the family unit. Each member is appreciated, recognised and valued to prepare them to deliver to their best, reciprocate the care and the love to other members as well as to give them space to reach self actualization. The family that the fast track introduced is one that has little regard for the family unit itself. To begin with, the period of the fast track was of high moral decadence, people were in transit and a lot of hit and run and one night stands occurred. People took little care about protecting the other. Those that remained in the communal areas were also affected in the sense that the able bodied members of their families left them to the same risks that those who left faced. Those in communal areas faced hunger, poverty, lonesomeness and support of all kinds. Families were divided and split and no one had prepared these families for such a prompt split (Nyawo 2013). It is this lack of preparedness that took its toll on the family and especially women because their men went for long periods on end and in other cases these men never came back or

came back in coffins to be buried. Such widows would never find closure with no explanation of how their men died. The women would not feel appreciated or valued. They would feel they were victims, ponies of a conundrum they never wanted to be part of. Interviews conducted during this research revealed that most women suffered immensely in the fast track because families got divided and they ended up with chores that were never theirs in the first place. They suddenly found themselves having to herd cattle, plough the fields, milking the cows and skinning dead animals on top of their own responsibilities. Since responsibilities were not shared women felt overwhelmed, over-burdened and over-loaded all the way.

Another attribute of a strong family is the ability of members to share experiences, complement each other and spend time together. This enables family members to do many things together. There was no quality time spend with family because either they were absent, too busy clearing a new farm, overwhelmed with double duties or too tired after a day of working to catch up with the day's work. Too much all the time also put members of the family in a bad mood, they were almost always bitter, angry, tired and a shadow of themselves. Such a scenario would make it very difficult for the women to keep the family together, make them sit together, eat together and share as well as resolve their differences.

Sociologists also argue that strong families are able to effectively deal with conflict, stress and crises. As such, conflict resolution is an attribute that should begin at home. The fast track land reform programme trained people otherwise. It came with unprecedented violence, chaotic and disruptive tendencies. The fast track land reform programme enjoyed the actual meaning of the Machiavellian Theory that the end justifies the means, (Nyawo, 2012). The implementation, the displacement of the white farmers, the settling in of new farmers and the handling of the farm workers were not smooth. People were traumatized, men were fighting and beating up white farmers in the view of their wives. The episode made children and women to witness a kind of violence that does not leave the memory easily. In most of the cases, as interviews would have it, men were the perpetrators of the violence in the form of the youth and war veterans. To worsen matters, family was not around to make instigators of violence come back to their senses, neither was family there to nurse and comfort those damaged by the violence. Sadly, there even seemed to be a quest to see more action of violence. The hunger to see blood, suffering and agony would not end with the fast track land reform, it would also be embedded within elections, the worst coming in 2007, five years down the line.

Finally, a strong family has what is known as rhythm, which is expressed in routines, rituals or traditions. These patterns of behaviour enhance family stability and glue it together. The fast track land reform

according to interviewees, introduced a devilish liking of the township, gregariousness, mob kind of existence, love for stories of destruction, lack of order and seriousness. Things fell apart with the fast track and the center could not hold. The glue that kept the family together suddenly got watery. The rituals and traditions, of marriage, of rain making, of burying the dead, of welcoming a new born and more that kept people together in the communal lands were missing in the resettled areas and, as such, the vulnerable were the biggest losers. As an institution the family lost out and within it women were hardest hit.

There is a strong link and interplay between the family and other institutions in society, for example, the structure of a country's economy will influence the extent to which members of a family are able to enter and participate in the labour market. The way an economy is structured will, to a large extent, determine whether family members are able to derive livelihoods from decent work opportunities, earn a living wage and have benefits which enable them to have acceptable standards of living. In the fast track era a lot of property and infrastructure was vandalized from farm houses, the land itself, schools, clinics and dip tanks. There was of settling of people in areas that were very far from service centers. As such, a lot of children could not attend school resulting in them not receiving education that would prepare them for the job market. In fact, most of them would hang around the farm as farm workers or ready for use in the 'rent a thug' kind of arrangement introduced by the fast track (Nyawo, 2012). Much as the welfare of children in a family is a concern of both parents, mothers were troubled more by the status of their children not in school. When the children committed crime; robbery, impregnating a girl or any other such, the father would blame the mother for not have nipped the behavior in the bud. Since the mothers are the ones always home, they would receive all the insults from those who would have been offended by their children.

The economy's structure will also have a bearing on the ability of family members to access quality health care, quality education and decent employment. In the same vein, the burden of disease and illiteracy, due to, among others, lack of skills and income may be shouldered by the family. Since the fast track displaced a lot of farm workers who then settled in the periphery of towns causing squatter settlement, women were also left with another kind of settlement that did not respect their privacy. For instance, the squatter settlement kind of arrangement did not always come with toilets, men can be okay with the use of the open or bush for toilet but women cannot always use the bush with the same kind of comfort. Other displaced farm workers moved into towns partially prompting 'Operation Drive out Dirty' of 2005. Informal businesses sprouted in the city also causing a lot of women to drift to South Africa to bring in wares to sell. The volume of

vendors in city centers increased also following the fast track land reform programme. Statistically there are more women vendors compared to men. As these vendors are out hunting for ware to sell from as early as 4:00am and coming back as late as 10:00pm, some responsibilities to family suffer considerably.

### **Conclusion**

In conclusion, however, although the family is regarded in a positive light, because of its caring and nurturing functions, it also has the ability to foster and legitimise the oppression of women in certain circumstances, for example, patriarchy has emerged as one of the family's most enduring forms of domination. In Zimbabwe, as in most African countries, patriarchy existed alongside colonial subjugation and racial discrimination. Women, particularly black women, carried a double burden under colonialism as they remained subordinate to both men and a settler population. Hence, women's choices were severely limited because of their gender. This is starkly illustrated by the manner in which colonial capitalism reinforced patriarchy through the labour issue. This system favoured men for employment opportunities, while the labour of women was merely seen as an adjunct to men's efforts. The dawn of land reforms did not significantly alter the former arrangements, despite the country having instituted a progressive Constitution and after instituting forward-thinking legislation. The fast track land reform programme allocated 20% land to women on paper but on the ground by 2013, only 12% had realized the benefit.

Zimbabwe continues to be a strongly patriarchal society. This is evident from patriarchal systems embedded in customary areas and the broader patriarchal practices and discourses that exist even in the fast track land reform programme processes. It is questionable whether any progressive national legislation that has been enacted in post-independent Zimbabwe has had any impact on the marginalized status and realities of women within the family unit which is itself under threat. In fact, many problems affecting women in Zimbabwe emanate from flaws in government legislation and from the family itself. There is need for a relook at the status of the family unit in as far as it should function as well as at the way women were and continue to be treated in land reforms. As it stands today, the fast track land reform programme of Zimbabwe and other economic factors have not kept the family together and as such rules of engagement within families got eroded to an extent and women have been affected gravely.

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# CEO DUALITY – AN EXPLORATIVE STUDY

*Ayyappan Palanissamy*

Business Faculty, Department of Business and Economics,  
Modern College of Business and Science,  
(Affiliated with University of Missouri, St. Louis & Franklin University,  
Ohio, USA) Muscat, Sultanate of Oman

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## Abstract

Corporate governance focus on a major issue to analyse whether the Chief Executive Officer of a firm should serve as board chairman is a debatable argument put forward in the changing world. In the wake of economic chaos globally with high-profile collapses of a number of large corporations in the recent years, has forced organisations to alter the composition of their corporate governance. The increase of pressure on corporate boards from enforcement agencies, as well as shareholders, challenges organisations to adopt new strategies and relook into their organisational structure. This article will look at literatures on various arguments put forward on the pros and cons of the CEO duality and its impact on firm effectiveness and performance. An analysis of theories of CG which includes Agency and Stewardship theories will be look into to have a clear picture on whether duality leads to firm effective performances or hinder performance. From the analysis, it can be concluded that there is no right or wrong board structure but generally shareholders and stakeholders are more inclined towards separation of the roles to promote independence and transparency. Although duality or separation may not have any direct linkage to firm performance, separation model promotes a healthier balance to the overall corporate governance of an organisation. A further research will be carried to look at the composition of the board in emerging corporations in gulf countries.

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**Keywords:** CEO duality, Agency theory, Stewardship theory, firm performance

## Introduction

Corporate governance normally refers to the guidelines by which corporations are managed. It specifies the distribution of rights and responsibilities among different participants in the corporation (such as the

board of directors, managers, shareholders, creditors, auditors, regulators, and other stakeholders) as well as the rules and procedures for making decisions in corporate affairs (Kiel & Nicholson 2003). Corporate governance mechanisms can be seen as falling into two main categories, either internal or external. Internal governance tools include the board of directors, subcommittees of the board, compensation programs designed to align the interests of managers and shareholders and other corporate control systems. External governance mechanism include accounting rules and regulatory reporting requirements, external auditors, the investment community, financial analysts, national laws and the shareholders themselves (Millet-Reyes & Zhao 2010). Duality role in a company means a person who has a dual role as Chairman of the board (COB) and Chief Executive Officer (CEO) at the same time. Many companies in this era implement the policies that provide the opportunity for the COB to also take part in a company as CEO. Duality role in a company rises to some debate / disagreement about the negative effects of the duality role in a company. There are two theories that support and reject the duality role in a company which is agency theory and stewardship theory. Agency theory which denies the duality role can be defined as " the relationship between the principals, such as shareholders and agents such as the company executives and managers" Jensen & Meckling (1976), while the Stewardship theory that supports the duality role can be defined as a " a steward Protects and maximises shareholder wealth through firm performance, Because by so doing, the steward's utility functions are maximized " Donaldson (1990).

One of the key topics in corporate governance is the link between CEO duality and firm performance. CEO duality here refers to a firm's Chief Executive Officer that also serves as Chairman of the board of directors (Boyd 1995). Various surveys carried out between 1999 and 2005 shows that in the United States of America (USA) between 60 and 80 per cent of all major corporations have the same person act as both the CEO and Chairman, whereas British, Canadian and Japanese companies has only about 10 to 20 per cent of the combined role (Brownbill 2010). Some researches cannot substantiate conclusively a linkage between CEO duality and firm performance (Anderson, Melanson & Maly 2007) whereas others have recommended that the separation of the roles would provide a healthier balance to the relationship (Parker 1994). The purpose of this exploratory study is set out to investigate the relationship between firm performance and CEO duality. So the key question is whether CEO duality can be classified as a more superior method of successful corporate governance and in turn contributes to effective firm performance?

In this article, there are some sections such as literature review and critical analysis that will be used. The literature review section will discuss

the descriptions of duality role, debate on agency theory and stewardship theory, application of agency theory and stewardship theory. Whereas in the critical analysis will look into the relationship between the duality role with organization performance (ROA) and financial performance (ROE). In addition, the advantages and disadvantages of duality role will also be discussed in this article to assist in deciding which one is better.

### **Methodology**

The methods that will be used to assist in the completion of this article is by using secondary data from previous research that has been done by other researchers and combined with my own critical analysis to give a conclusion whether a company should implement duality of role / duality role should be separated.

### **Literature Review**

CEO duality is a situation in which the Chairman of the Board at a company who also a Chief Executive Officer at the same time. This dual role is a policy from a company that implements a position to fill as COB and CEO. CEO duality requires a person to be able to perform the role as COB and CEO at the same time to lead the company. The roles of the COB are different with the roles of the CEO, but in the CEO duality; the person is required to carry out these roles simultaneously. Several roles as a COB are to ensure effective operation of the Board, to support and advice the CEO in the development and implementing the strategy, and some other roles. On the other hand, the roles of the CEO are to develop strategies for recommendation to the Board and ensure that agreed strategies are reflected in the business, ensure that the business performance is consistent with the Business Principles, and several other roles.

CEO duality in a company raised some debate among some researchers who rejected the duality role through the agency theory and who supports the existence of duality role through a stewardship theory. Besides, the advantages / disadvantages of CEO duality also provide arguments in determining whether CEO duality role good / bad for a company. Some differences in the opinion of the researchers regarding the duality role is (Pfeffer and Salancik, 1978) who argue that “having leadership that is focused with a single individual increases a firm's responsiveness and ability to secure critical resources”. On the other hand “CEO duality diminishes the monitoring role of the board of directors over the executive manager, and this in turn may have a negative effect on corporate performance” (Dayton, 1984). This is certainly raises a very serious debate among the researchers in support their argument to determine which one is better for a company.

## **CEO Duality (Pros and cons)**

### **Advantages of CEO Duality**

**Clear direction of a single leader:** A BOD who also serves as CEO certainly has enormous power within a company. The advantage to be gained by the presence of CEO duality is a clear direction of a single leader, this happens because of all the activities undertaken by the company only rely on one person. This is of course will provide a clear direction from the CEO to their managers, stakeholders, and their subordinates regarding the strategy and business decisions that exist within the company.

**Efficiency and Effectiveness:** In the CEO duality, efficient means the company does not need to spend more money to hire CEOs from outside so that it will certainly provide efficiencies for the company in minimizing their expenses. On the other hand, effective in the presence of CEO duality means substantial power as the BOD and CEO provide the effectiveness of the company in making a decision to reach the goals of the company; this is because in CEO duality does not require a long process in making a decision, so it will save more time.

Disadvantages of CEO Duality:

**Segregation of Duty:** A strong power in the CEO duality actually is good because it can create a clear direction of a single leader, but on the other hand it is also a disadvantage of CEO duality. This is because if a person has enormous power within a company then it will create segregation of duty.

**Lack of transparency:** This happen because of the strong power possessed by the CEO duality provides an opportunity to hide whatever is in the company which resulting in lack of transparency of the company.

### **Theories of Corporate Governance:**

#### **Agency theory**

It was first used as a theory in economics by Alchian and Demsetz (1972). In the past decades, the agency theory which can be explained as the relationship between the principal (Stakeholders) to its agent (Management) is more often used as theories in many fields. Eisenhardt (1989) states that “the agency theory is used in many fields such as accounting, marketing, organizational behaviour, political science, and sociology”. Basically, agency theory is a theory which suggests the separating roles of the BOD and CEO in running a company to achieve the goals. Agency theory emphasizes that a company should not be led by one person who plays a dual role as the BOD and CEO in a company. This means that the principal elects the board, who in turn elect the management team to execute the routine daily business decisions (Abdullah and Valentine, 2009). The purpose of the agency theory which suggests that the separation of roles between the BOD

and the CEO is to reduce agency cost. Other than that the theory also assumes that when a conflicting management decision, the principal or the agent has selects the best option that increases their own self - interest (Davis et al., 1997). Agency theory is the most dominant theoretical framework in corporate governance research. It is a simple theory that corporations consists of two participants – managers (agents) and shareholders (principal) and the fact that human beings act as self-interested and generally unwilling to sacrifice personal interests for the interest of others (Brownbill 2010). Agency theory suggests that CEO duality increases an organisation’s agency cost as management might pursue their own self-interest by forgoing an opportunity that may be in the best interest of the shareholders. Hence it is believed that in order to minimise agency costs, the role of CEO and chairman should be split (Abels & Martelli 2011). Generally duality deteriorates the fiduciary oversight power of the board of directors – in other words, there wouldn’t be a solid checks and balances mechanism (McGrath 2009). CEOs are held liable to shareholders through the Chairman and the board of directors. When a CEO dominates the board through a dual role, it can hamper and weaken the protection sought by shareholders (Nicholson & Kiel 2007). An implication of agency theory is that where CEO duality is retained, shareholders interest could be protected by aligning the interests of the CEO and shareholders by a suitable incentive scheme for the CEO (Donaldson & Davis 1991). CEO duality can also complicate the issue of CEO succession whereby the CEO retires but remain his/her role as the chairman. Although the role is separated but the chairman role is no longer deemed as independent and the board might take sides with the chairman whom they have a history with that would lead to conflict of interest (McGrath 2009).

### **Stewardship theory**

This is an alternative framework to the agency theory, with its roots in psychology and sociology, and it explains corporate structures in which the stewards (management) are inclined and motivated to operate in the best interest of their shareholders (Davis et al., 1997). Stewardship theory is a theory which supports the CEO duality in a company and this theory is the rejection of the agency theory which explaining the negative effects of the duality role and suggests duality role should be separated. Stewardship theory emphasizes that a firm should apply the duality role where BOD is also the CEO of a company. The main purpose of the existence of stewardship theory is to reduce the monitoring and controlling costs; this is because if a BOD also becomes the CEO, the company certainly does not need to pay more to hire a CEO from outside the BOD. Other than that, (McGrath , 2009) stated that “the merging of duality roles institutes a

harmony between the board of directors, managers and shareholders, the which is more efficient and effective in order to reach the goals of increasing sales and profit maximization within organizations”. Stewardship theory deems that management (stewards) are inclined and motivated to operate in the best interest of their shareholders. Unlike agency theory, it believes that management are trustworthy stewards who ultimately desire to execute decisions that benefit the entire organisation rather than personal gratification (Abels & Martelli 2011). The supporters of this theory believe that when one person holds both roles, he or she is able to act more efficiently and effectively. Duality creates unity across the company’s managers and board of directors, which ultimately allows the CEO to serve the shareholders better (McGrath 2009). Studies have shown that the returns to shareholders are improved by combining rather than separating the roles of the chairman and CEO which appeases the stewardship theory. It is said that when owner (principle) reduces its power but instead empower their managers then the returns of shareholders are safeguarded (Donaldson & Davis 1991).

It is believed that separation of the roles dilute the power of the CEO to provide effective leadership, creates potentiality of rivalry between the chairman and CEO, leading to compromise rather than decisiveness and having two spokesperson can lead to confusion and opportunity for third parties to take advantage of the situation. Joint roles may enhance external relationship as it is interpreted as an organisation with strong leadership and a clear sense of direction (Daily & Dalton 1997).

### **Debate of Agency Theory and Stewardship Theory**

Debate between agency theory and stewardship theory by several researchers produce a lot of different views on each of these theories. Agency theory that supports the separation roles of the COB and CEO stated that CEO duality gives a negative effect for the company. Agency theory emphasizes the negative impact of CEO duality in terms of company performance (ROA) and financial performance (ROE) in a company that adopted a system of CEO duality.

This statement is supported by several researchers such as Jensen and Meckling , 1976; Fama and Jensen , 1983; Eisenhardt , 1989; Rechner and Dalton , 1991; who states that “a centralized authority leadership may lead to management 's domination of the board , the which results in poor performance”. By seeing the negative effects caused by the CEO duality certainly make many people feel that CEO duality is a bad thing for a company.

Several researchers through their respective arguments debate about stewardship theory as a counter in response to agency theory which stated

that CEO duality should be separated. Stewardship theory which supports the duality role in a company's emphasizes that CEO duality gives positive effect within a company. Stewardship theory emphasizes the flexibility that is owned by the COB who also the CEO can assist in improving company performance (ROA) and financial performance (ROE). This statement is supported by several researchers who support the existence of CEO duality such as Donaldson and Davis, 1991; Davis et al., 1997, who states that “corporate performance can be enhanced, when the executive manager has full authority over his corporation by serving also as the chairman, as less conflict is Likely to happen”. This is of course led to a long debate between the two theories that would cause confusion for many people.

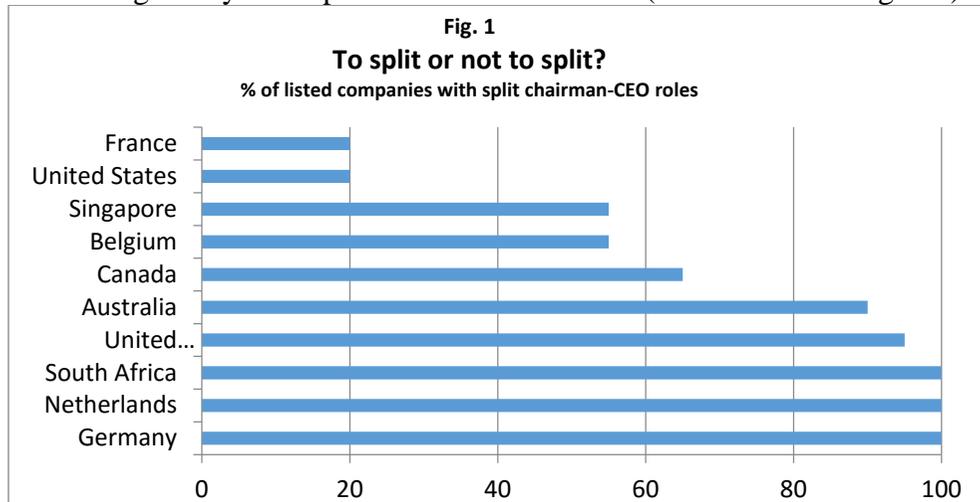
So which theory is more favourable? A lot of studies are inconclusive and has a mix outcome on which framework is more superior to the other. Generally studies have shown that independent directors are associated with higher firm performance (Abels & Martelli 2011). Separation of the roles does indicate higher independence where a chairman is non-executive or not previously a CEO of the organisation but who has sufficient knowledge of the industry and commitment to the job alongside a dynamic boardroom culture would allow the chairman and the board to provide a fresh perspective when examining issues raised by management (Coombes & Wong 2004). The most visible support of separation of the roles is activist shareholders which are normally institutional investors. They are an increasing powerful force in the corporate world controlling more than one trillion dollars of corporate equity (Daily & Dalton 1997). The continuous assertion to the debate is that a chairman should be an independent monitoring/counsellor of a firm's management especially to the CEO whereby separation of the roles do provide this independence (Daily & Dalton 1997).

Generally corporate governance in the United Kingdom and the United States shares a lot of similarities but when it comes to CEO dualism, there is a big difference in view. The view in the United Kingdom and other countries (refer to fig.1 below) that embrace the idea of separation is that the tasks of the chairman and CEO are different and potentially conflicting (Coombes & Wong 2004). One of the major roles of the chairman is to monitor and manage the CEO. It is also believed that when the roles are combined, it gives an opportunity for information to be withheld and therefore reducing transparency and access to information. Essentially the separation of the role is to provide a healthier balance and a check and balance mechanism to the system (Parker 1994). Some says that separation is viewed as an emergency measure for financially troubled companies (Daily & Dalton 1997). Generally the role of the board is to provide guidance to management who then look into the day to day function of the organisation.

The board's role is to actively question the CEO and seek for open information and open dialogue in order to have an effective decision making process (Kiel & Nicholson 2003). There is plenty of evidence to show that a weak and inefficient board will sooner or later allow even a good company to falter, lose its way, and perhaps even fail. A strong and independent board of directors is therefore the bedrock on which effective corporate governance must be founded (Parker 1994).

It is well known that there are two main types of board structure: one-tier boards (unitary) and two-tier boards (Tse 2009). Within Europe, the United Kingdom is a prominent country with a one-tier board system whereby Germany employs the dualism of a management board and a separate supervisory board (Jungmann 2006). In Australia and the United States, unitary boards structure are practised as well (Kiel & Nicholson 2003). Unitary board refers to a single layered board structure that consists of non-executives and executives directors. The other board structure, dualism board consists of a supervisory board and executive board of management where there is a clear separation of functions between supervision and management (Tse 2009). In the United Kingdom, although it follows a unitary board structure, about 95 per cent of all FTSE 350 companies adhere to the principle of separating the CEO-chairman role. In the United States, by contrast, about 80 per cent of S&P 500 companies practices CEO duality.

The chart below depicts the percentage of listed companies in ten countries globally with split chairman-CEO roles (Coombes & Wong 204):



From the chart above it can be seen that separation of the role is gaining popularity in the 21<sup>st</sup> century. Majority of the countries listed in the

chart have more than 50 per cent of its listed companies with split chairman-CEO roles.

So what is the relationship between CEO duality and firm performance? Studies seem to indicate that duality doesn't have a direct correlation to how well a company performs. It is surprising to learn that high-profile corporate scandals like Enron and WorldCom which is essentially due to CEO corruption, did not have a duality structure (Coombes & Wong 2004).

In an empirical study conducted in 2014 on European Union (EU) listed firms by Huining Chen (2014) revealed that CEO duality does not have much influence on firm performance. There still exist a debate ongoing with the primary theories of CG, agency and stewardship.

### **Recommendations and Conclusions**

From the studies and researches, it seems that there is no right or wrong board structure or theory towards successful corporate governance and in turn firm performance. No other board structure is more superior to the other. It is highly dependable on the goals and strategy of the organisation, legal requirements of the country as well as underlying human factors. Supporters of separation generally believe that independence of the board is the key to successful corporate governance whereas dualism believes that it showcases unity and strong leadership. In every businesses there is a need for a check and balance mechanism which CEO duality seems to be lacking. Generally who is monitoring the CEO except the CEO in a duality model? CEO duality also does not promote independence in the corporate structure which is an essential element to healthy corporate governance. Separation on the other hand promotes independence but it is also largely dependable on the characteristics of the individual person handling the separate roles. It can also lead to conflicts when both parties are dominant.

The recommendation is that with the increasing demand and expectations from shareholders and stakeholders and the sheer magnitude of the combine tasks involved, it is not encouraging for one individual (CEO and chairman) to carry two such increasingly difficult jobs. Separation of the role provides a healthier balance especially in a large and complex multinational group. It would allow space for CEO to focus on the day-to-day management of the business whilst the chairman to look into the board's expanding responsibilities. Having said that, the essential part of the separation module is the CEO-chairman relationship in ensuring that there is transparency and a continuous flow of information between both parties for effective decision making in the interest of the shareholders and stakeholders.

CEO duality can be effective during certain period of time such as financial crisis or when the organisation is at its early stage as it would promote fast decision making and portray a united front to stakeholders. However, as the organisation grows and the structure becomes more complex, it does not promote independence, transparency and balance of power. There is no right or wrong board structure but generally shareholders and stake holders are more inclined towards separation of the roles to promote independence and transparency. Although duality or separation may not have any direct linkage to firm performance, separation model promotes a healthier balance to the overall corporate governance of an organisation.

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# REDEFINING OF DEPENDENT WORK AND ITS SOCIO-LEGAL DIMENSION IN SLOVAK REPUBLIC<sup>6</sup>

*Vladimira Zofcinova, JUDr., PhD*

Pavol Jozef Safarik University in Kosice,  
Faculty of Public Administration, Slovakia

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## Abstract

The dignity of the employees in the performance of dependent work must be the limiting factor that determines the present as well as the future trend of labor law in Slovak Republic. This article is focused on selected aspects of the defined development of dependent work and attention is also paid to the indicators of dependent work. The author refers in further points that the fact that current dependent work legislation of the Slovak Republic and its global peers must create a relative equal level for economic competition with the acceptance of the dignity of man as the executor of work.

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**Keywords:** Term dependent work, employee, indicators of dependent work, the dignity of employees

## Introduction

The role of labor law, among other things, is to protect and effectively enforce the inherent human dignity of workers against pressure and infringement from the owners of the capital (Olšovská, 2009). Labor law statutes seek to guarantee the protection of the employees as the weaker, more vulnerable contractual party, who could be (and we believe that at present is being) "forced" to adopt such working conditions that would even contradict generally socially recognized ideas on fair and reasonable circumstances of work performance or even bordering with human dignity. The rate of perception and acceptance of the boundaries of human dignity is a subjective category that, despite the legislative efforts, is currently a sensitive and politically-economically used issue for the promotion of

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various objectives under the blanket of the solutions of social securities of ordinary people who tend to ensure decent work for themselves and their families.

If the labor law should fulfill its protective function, it must guarantee that adequate protection will cover anyone for whom it is with regard to the content and nature of the relationship in which the work performed for another person is determined. The subject of our concern is the area of performance of dependent work as the fundamental source to meet the needs of individuals and their families. If the human dignity is restricted during its application, it would cause both an ineffectiveness of legal regulation of the rules of labor law and secondly, potential social dumping, social exclusion, labor market segmentation and other highly problematic phenomena. Therefore, the definition of dependent work is essential because the measure of labor law impact on work performance is important.

### **The development of the definition of dependent work**

The fact, that the majority of employed people (not only in Europe but also worldwide) currently work with the legal status of an employee, is noteworthy. It shows that employment is strong, respected, proven and successful legal institution with historical tradition, exceeding the framework of Europe (Barancová, 2011). The conditions of its performance vary in many countries, but ultimately the motivation of work executors is still the same, i.e. to ensure a livelihood for themselves and their families and to have a dignified life, which in many countries of the world is not a certainty.<sup>7</sup> Štefko points out, that the legal definition of dependent work may be in the international context described as exceptional. Usually, on the contrary, dependent work is defined indirectly through the definition of the employees (Belgium, Estonia, Finland, etc.), the employer, or employment contract (Štefko, 2013). In this context, the definition of dependent work in Slovakia is rather exceptional. The conceptual definition of dependent work semantically affects not only labour law, this term has serious legal consequences for social security law, tax law, criminal law and so on. The marks of dependent work that with no doubts separate performing of dependent work from other independent forms, have the direct connection also with the social dimension of mentioned relations. This connection is based on one of the essential characteristics of building elements of social protection systems and which is binding participation (resp. participation) in general social system of social protection covering the constituent part of social events catalogue with the performance of employment. Dependent work is represented mainly by certain groups of employees according to

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<sup>7</sup> Available at: <http://www.euractiv.sk/podnikanie-v-eu/clanok/zneuzivanie-zamestnancov-je-v-eu-stale-bezne-023773>

criteria of the need to guarantee social protection (Lacko, 2012). For the present form of dependent work (de lege lata), there were three important milestones in time.

***The first milestone was the period until 2007***, in which Slovak law didn't recognise the definition of dependent work. By the historical excursion we can state that legislative term „dependent work“ had been anchored by the amendment of the Labour Code with effect from 1.9.2007. Until 31.08.2007 the legal status had not governed dependent work as an independent institute, but defined the employee who performed dependent work. (Considered was an employee as a natural person, who carrying out dependent work for the employer under an employment relationship or, insofar as a special regulation so provide, similar labour relationship under his instructions, for a wage or remuneration).

***The second milestone - the year 2007*** when there was a significant change (adoption of the amendment of the Labour Code, Act no. 348/2007 Collection of laws), under which the legislature defined dependent work. Dependent work required cumulatively fulfillment of eight identification marks. In accordance to § 1 article 4 of the Labour Code, dependent work had been considered „work carried out personally by the employee for the employer within a relationship of employer as superior and employee as subordinate, in accordance to instructions of the employer, in the employers name, for a wages or remuneration, during working time determined by the employer, on the employer's costs, his production resources and on behalf of the responsibility of the employer. It represents the work performance that consists mainly of repeating designated activities.“ The disadvantage of such number of identification marks of the concept of dependent work was, that it easily allowed the employer to create other law relations with natural person even during the performance of real dependent work. Experience has shown that defining such a large number of legal features of dependent work was not the right legislative solution because not all the legal characteristics of the concept of dependent work had the same legal importance. Some of the indicators of the term dependent work were significant and some of them had only minor significance (Barancová, 2012). Such a legal state with a high number of indicators of the term dependent work that had to be met cumulatively, caused considerable problems even in execution of the labour laws. In application practice, not every work, which had the essential characteristics of dependent work, was (according to slovak legal form of Labour ) considered as dependent work, for example if there was one legal character missing (for example work had not been carried out by production resources of the employer). For the reasons stated above, in the period of last few years, the employment of natural persons in the form of dependent work, not only in Slovakia but also in other countries has come under significant

pressure from employers because it was been associated with financial costs which did not occur at other legal forms of work performance. Therefore employers preferred other legal forms of work involvement of the employees, which did not create a burden of obligations to provide the relevant social funds for them. With Given requirement of cumulative fulfillment of all the features of dependent work a paradoxical situation occurred where it had been sufficient for the employers to demonstrate non-fulfillment of one single mark of dependent work and they could cover the performance of their activity by another contractual relation. These were *disguised employment relationships*, it means usage of contract types, for example commercial law or civil law for the performance of dependent work. The motivation of application of masked employment relationships is evident. Work performance in employment relationship is connected with higher economic costs than providing the same work under the regime of other civil law arrangements. Consequently, it is to some extent in the logical (but not legitimate) interest of the employers to ensure the need of work performance outside employment relation. (Dolobáč, 2015).

*This legal state lasted until 2013 (the third milestone).* The amendment of the Labour Code reduced the number of legal indicators of dependent work to six statutory indicators, which again had to be met cumulatively. Dependent work was a work carried out personally by the employee for the employer within a relationship of employer as superior and employee as subordinate, in accordance to instructions of the employer, in the employer's name, on the employer's costs, for a wages or remuneration, during working time determined by the employer. From the definition stated above arises, that it came to a narrowing of the indicator of work carried, which consists mainly of repetition of assigned activities and work performance with production resources of the employer. The current legal status (amendment of the Labour Code - Act no. 14/2015 Collection of laws with effect from 01.03.2015) once again narrowed the definition of dependent work: an indicator of wage or remuneration was excluded. The reason for this change is the fact, that application practice in some cases has shown, that employers did not negotiate the remuneration for executed work with employees. Currently, it will not be necessary to prove the reciprocation. The change stated, however, shall not relieve the employer's obligation to provide wage or remuneration for work performed, because such an obligation results from the article 36 a) of the Constitution of the Slovak republic as well as from the provisions of § 43, § 47 and §118 of the Labour Code.

From the sketch of the **redefinition of dependent work** above, we can see that when assessing whether it is dependent work in regime of labour law of Slovak republic or not, we will examine „presence“ only of remaining

features of dependent work. Out of initial ten characters there are only five left, which in terms of non-binding recommendations of International Labour Organisation no. 198 of 2006 concerning the employment relationship can be described as the most important for the identification of dependent work (Žulová, 2015). We may competently assume that this will prevent „the use of“ other contractual types for performance of dependent work. Conclusion of the employment contract shall commence employment. By doing this will give greater legal security to employees themselves, regarding their demands, not only in the field of labour law, but also in social security (Barancová,2012).

Legal status de lege lata defines (§1 art.2. of the Labour Code) dependent work as work which is carried (in case of the presence of all five characters cumulatively):

- in relation of employer superiority and employee subordinate,
- personally by the employee for the employer,
- in accordance with the employer's instruction,
- in the employer's name and
- during working time determined by the employer.

This is called „**positive allocation** of dependent work“. Subordination principle (relationship of employer superiority and employee subordinate) is considered as fundamental principle characterizing the employment relationship and distinguishing it from other legal relations. It is an unequal relation based on hierarchy. Unlike other private-law relationships the employee at performance of dependent work can not be substituted. Agreed work is exclusively linked to a specific employee. The employee is obliged to perform work according to the directions of the employer so that he is personally and economically dependent on the employer. The work that the employee executes is not in his name, but on the behalf of the employer who bears the risk of the performed work. Just by mentioning legal characteristics the dependent work differs from the enterprising under commercial law regulations. The employer as a bearer of the risk of work performance decides also on evaluating the operational performance of employee working on account of the employer. The term „employer's name“ or „name of the employer“ in labour regulations of the Slovak Republic is absent, the characteristics of the employer's name are derived from commercial and civil regulations. An employee performs dependent work in specific working time determined by the employer. Dependent work can not be carried out in contractual civil relations or commercial law contractual relationship - it is called **negative allocation** of dependent work. We may competently assume, that the reduction of number of indicators of the term „dependent work“ by the employer narrows legal

space for legal coverage of dependent work performance by contractual types of civil or commercial-law.

**A natural person, who carries dependent work must have legal status of an employee.** Slovak Labour Code considers an employee a natural person, who carrying out dependent work for the employer under an employment relationship or, insofar as a special regulation so provide, similar labour relationship. An employee in labour relation gives up not only his economical freedom to free disposal of his labour, but also his right to profit (Barancová, 2012).

In the European Union law there is no legislative definition of term employee (stable definition is only for the purpose of „freedom of movement of person“, otherwise the concept of an employee is subject to national legislation). The European Union is based on a broader conceptual definition of the term worker, the content of which understands much wider than the content of the concept of the employee. Since the union law, whether primary or secondary, we will not find legislative definition of a worker, we must seek legal constraints of that term in judicative of the Court of Justice of the European Union (current judgement of 26. March 2015 in legal case C-316/13 Fenoll). In the legal case (C- 66/75) Lawrie Blum the Court of Justice of European Union stated, that the most important feature of an employment relationship consists, that the worker performs activities in benefit of other during certain time period and according to his directions, for which in return he receives remuneration (Dolobáč , 2012). Under current law of the Court of Justice of the European Union the employee is a natural person, who performs dependent work for other people and that within specific times and according his directions and receives remuneration as countervalue. The length of labour relation, actually for short-term employment relationships is not an obstacle for natural person performing dependent work not to have the legal status of the employee (C- 53/81 (Levin). Definition of employee allocation is in close correlate relation with the performance of dependent work, which we have mentioned above.

### **Dignity as a value orientation in labour law**

Labour law is in the context of its historical development perceived as a medium „ultima ratio“ to maintain the social rights of working people. The rate of consideration of the protective function in the individual labour institutes is at the same time also dependant on the orientation of national political representatives participating on employment legislation changes. Legislative intervention not only in the Slovak republic, but also in other European Union countries took the route of strengthening the flexibility of individual labour institutes with the goal to enable improved and faster adaptation of work processes to changing conditions on commercial market

(Švec, 2012). The question is whether adaptation to the economic situation is not sometimes at the expense of perceptions of social-law quality of the status of employed persons. Social risks to which the employees are currently exposed to on the job market affect their social status directly or indirectly. It comes to loosing of the positive view of economically active persons, as uncertainty in retaining a job position and at the same time uncertainty of regular payment for performed work is so „strong“ that the interest in all-society solution of „serious economic issues“ is reduced. Through the prism of ideas about the correct economically efficient operation of the state it is clear, that young people, graduates, older people reaching retirement age and a number of other vulnerable categories of people have difficulties to perceive the whole society, as well as european dimension of solution of the social and economic issues, when every day they are exposed to the solution - how to satisfy their needs. Fear or anxiety of job loss, of remuneration for performed work, is weakening element within standardly functioning families.

As the majority of natural persons secure their subsistence by performance of dependent work in employment relations, the adjustment of labour relation has significant social-law aspects. In this context, we can not forget the European Union, which for decades is not only purely economic grouping, but its creation of regulations gains also a social dimension and directly affects the creation of employment relations (relationships) in national system (Dolobáč, 2015). Currently, dependent work in global rates must create a relatively equal conditions for economic competition, but on the other hand, with acceptance of the dignity of man as the executor of work. This fact points out the Charter of Fundamental Rights of the European Union, because (since) the protection of human dignity is ranked on first place in the catalog of all other human rights, including social rights.

The respect for the dignity of employees in the labour market must be a priority because of frequent forced claiming liberalization and flexibilization of employment relationships. Although the emergence of the european flexicurity concept was supposed to mean a necessary return to the discussion about the harmonization of human rights protection and employees freedom with the necessary modernization of labour relations, experience has shown that member states of European Union have focused on strenghtening the flexibility of labour relations. Barinková notes, that labour law can be made more flexible up to certain boarders and in accordance with legal standards of human rights, while preserving human dignity (Barinková, 2011). By this we can conclude, that it is undisputable that by precising of dependent work the legislator within the labour law of the Slovak republic tries to, in accordance with european standards, eliminate

the persistent disguise of dependent employment by legal forms of other legal sectors than labour law.

## **Conclusion**

We believe, that the dignity of employees in work performance must be the limiting factor, which determines the present and the future trend of labour law of Slovak Republic. Trying to choose between the work and family as well as negative situation on the labour market, which does not allow employees to choose working position according to their wishes, puts them in social uncertainty. Continuing enforcement of flexible efforts without adequate precautions in the area of labour law protection even deteriorates the situation where employees often find themselves at the end of physical and mental powers. Flexibilisation and differentiation of new social (labour) risks related to the performance of dependent work also deepened the dualization of the labour market when it comes to a significant increase in "non-standard" employment contracts connected with the uncertainty from repeated unemployment and social exclusion. Despite the legislative basis for the definition of dependent work, its precisation the contracts continue to be concluded on the basis of other legal sectors. Employers therefore pursue the economic indicators, they eliminate liability for work executors. Satisfaction of the life needs of individuals by performing the dependent work finds its expression in specific life of every human being. The justification of the solution to this problem rises from the basic role of the state, which is establishment of the basic assumptions for freedom of citizens, as well as from the role of the state to create the basic preconditions for humanly dignified life of citizens.

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# **EFFECT OF BUYER-SUPPLIER RELATIONSHIPS ON PROCUREMENT PERFORMANCE: EVIDENCE FROM KENYAN SUPERMARKET**

*Korir Loice, PhD Student*

Department of Marketing and Management Science,  
School of Business and Economics, Moi University, Kenya

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## **Abstract**

The purpose of this paper was to establish the effect of buyer-supplier relations on procurement performance. The study was informed by social exchange theory. This study employed explanatory research design. The target population was 112 procurement and sales managers drawn from thirty-four (34) supermarkets located in Nairobi County. Census technique was used. Data was obtained using structured questionnaires. Data was analyzed using descriptive statistics such as frequency, percentage, means, and standard deviation. In addition, Pearson correlation and multiple regression models were used to test linear relationship and hypothesis testing respectively. Study results showed that commitment, communication, cooperation and trust has a positive and significant effect on procurement performance. Hence, high levels of commitment, trust, communication and cooperation enhance sustainable competitive advantage hence improving the procurement performance. The study therefore recommends that there is need for firms to have a long term partnership with the major suppliers and aim at giving maximum attention to the relationship with suppliers so as to maintain it and enhance competitive advantage which will lead to improved procurement performance. There is also need for firms to have frequent and timely communication with suppliers and inform them of unforeseen challenges. Suppliers need to keep the promises made to the firm and offer credible information and keep the firm's best interests in mind. Suppliers need to be responsible for the results of the industrialization and manufacturing process of the supplied part. It is also recommended that this study be replicated in different business sectors within the other regions.

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**Keywords:** Commitment, trust, communication and cooperation

## Introduction

Procurement performance is important role in supply chain management, potentially influences the firm's quality performance, product innovation, customer responsiveness, and the firm's financial performance (Chen and Paulraj, 2004). Internal and external customers judge the value received from procurement and will defect if their expectations are not satisfied. In this regard procurement would be expected to emphasize value creation and delivery, not procedures. One tool procurement can use to improve both its supply chain performance and service to other functions, while helping to improve the firm's competitive position, is to develop a cooperative relationship with appropriate suppliers. The influence of the relationship strategies between buyer-supplier on the procurement performance depend on the benefits perceived by both parts.

Janda *et al.*, (2002) argue that by treating suppliers as allies and sharing strategic information with them, firms can achieve better lead times and quality, increase operating flexibility, and establish long-term cost reductions, all of which could help these firms enhance value for the ultimate customer. According to Chin-Chun (2008), the benefits that result from collaborative relationships come in the form of a firm's ability to engage suppliers and other partners in mutually beneficial value exchanges. Indeed, Hunt (2000) considered relationships to be a resource and therefore form part of a Buyer-supplier relationships firm's capital.

Recently research in buyer supplier relationships has received increasing attention, especially as it has become widely known that various benefits can be enjoyed by developing closer relationships with suppliers. Buyer-supplier relationships have evolved towards a new form in order to respond to intensified competition. The movement towards closer co-operation between buyers and suppliers also results from the global and competitive market place that focuses on cost, quality, delivery, flexibility, and technology, which subsequently create a greater need to emphasize inter-firm collaboration with various business partners. (Mac Neil 2004) . Togar, (2002) argues that firms engage in co-operative buyer supplier relationships because they expect to benefit from them. Only as long as the firms perceive a benefit from the relationship, do they continue in a co-operative fashion. First, there is increased evidence that suggests buyer supplier relationships are of great importance for firms because such relationships can create value for both the parties involved. Second, while the issues surrounding supplier alliances have been discussed in the procurement and marketing fields they have been less-frequently addressed in the operations management. Finally, although buyer supplier relationships have been studied from various research streams, efforts have been concentrated on the relationships with private suppliers rather than on those with the government suppliers. The

issue of developing close relationships with suppliers is equally important with regard to state parastatals.

Effective buyer supplier relationship has been defined as two or more chain members working together to create a competitive advantage through sharing information making joint decisions and sharing benefits which result from greater profitability of satisfying customer needs than acting alone (sridharan,2002) buyer\supplier collaboration is departure from the anchor point of discreteness that underlies business transactions to a relational exchange as the roles of supplier and buyer are no longer narrowly defined in terms of simple transfer of ownership of products. By focusing on relational exchange collaboration entails the activities that are undertaken faintly rather than unilaterally (Heide 2003) Zahear and Zenkatraman 2004 Simatupangand Sridharan (2003)suggest that the requirements for effective collaboration are mutual objectives ,integrated policies joint decision making information sharing of benefits and losses.

Buyer/supplier commitment is the belief that trading partners are willing to devote energy to sustaining the relationship (Dion et al.2004) whereas according to Moorman, Zaltman and Deshpande (2002) buyer\supplier commitment is an enduring desire to maintain a valued relationship. Through commitment partners dedicate resources to sustain and further the goals of the collaboration. John (2009) and Krause (2006) propose that the expectation of relationship is important for motivating collaboration in inter-organizational relationships Sridharan (2005) noted that information sharing joint decision making and incentive alignment are factors that facilitate collaborative action through information exchange between the buyer and supplier.

Heide, (2009) argues that buyer/supplier collaboration enhances procurement performance hence creating a competitive advantage through sharing information making joint decision, inter-organizational relationship. This indicates that the level of supply chain collaboration has an important interaction effect on the relation between external resources and buying firm performance, where collaborative forms of buyer-supplier exchange facilitate greater access to external resources. However, whilst there is much research material on buyer and supplier performance assessment and management, a relationship perspective can bring an added dimension, especially to the procurement performance of close, mutual relationships like that of supermarkets. Further, there is dearth gap on the existing literature on buyer-supplier relationship against procurement performance particularly in the Kenya scenario where many supermarkets faced with delays of suppliers goods, cancelation of tender. Buyer –supplier relations management therefore emerges as one strategy that offers solution to the above problems This study therefore seeks to establish the effect of buyer-supplier

relationships on procurement performance among supermarkets. This study hypothesized that:

*H<sub>o1</sub>: There is no significant effect of trust on procurement performance*

*H<sub>o2</sub>: There is no significant effect of communication on procurement performance*

*H<sub>o3</sub>: There is no significant effect of cooperation on procurement performance*

*H<sub>o4</sub>: There is no significant effect of commitment on procurement performance*

### **Theoretical review**

Previous study has illustrated various theories used to explain the relationship between buyer-supplier relationships on procurement performance such as resource-based view theory (RBV), social exchange, and transaction cost theory among others. This study is anchored on the social exchange theory.

Based on the social exchange theory a business network may be seen as a type of exchange network (Blakenburg&Johanson, 1992), and can be defined as a set of interconnected exchange relationships (Prekert&Hallen, 2006). This is directly linked to supply relationships, and underlines the importance of the supply network within the business network context.

An alternative approach to the social exchange theory perspective is the market exchange theory perspective (Easton &Araujo, 1994), which builds on the concept of organized behavioral systems also reinterpreted by Bagozzi (1974). Alajoutsijarvi, Tikkanen (2001) even point out the perspective of networks as business systems, where the business network is understood as an organized behavioral system of exchange.

Eriksson, (2001) argues that the main focus of such a system is on the transformation and exchanges of resources, and less on the social exchange component. It is from this perspective that buyer-supplier networks sometimes referred to as supply networks are most frequently analyzed. These relationships are however usually embedded in various networks of interconnected buyer-supplier relationships, where both market exchange transformation and exchange of resources, as well social exchange perspectives trust, collaboration, etc. should play equal parts. However, despite this, there still exists a gap in the existing literature in appropriately balancing both of these perspectives in the study of buyer-supplier relationships. Thus, while the marketing literature has so far focused mainly on the impact of trust and commitment on satisfaction and loyalty, supply chain management has focused narrowly on the hard determinants of flexibility, like i.e. information optimization and inventory management.

Claro (2004) also emphasizes how business networks, supply chains networks and buyer-supplier relationships are all types of business relationships ranging from a web of connections to a dyadic relationship with often blurred boundaries.

## **Empirical review**

### **Trust and Procurement Performance**

Trust is identified as a significant predictor of positive procurement performance in business relationships. A critical source of excellent procurement performance resides in establishing and nurturing trust among the participating organizations. When trust is widespread across the supply chain, ideas, knowledge, products, and services can freely flow to help design, implement, and manage processes and activities aimed at creating value. Accordingly, a significant literature has pointed out the beneficial impact of trust on the efficient and effective management of procurement performance, and showed that trust is a powerful antecedent of effective cooperation and a significant predictor of positive performance outcomes (Ireland and Webb, 2007; Laaksonen et al., 2009).

Literature has largely highlighted the valuable effect of trust in procurement performance. Benefits of trust have been investigated in different fields of studies and explained through diverse theories, mainly the transaction cost economics and the relational exchange theory. Within the transaction cost economics theory, trust is of economic value because it reduces transaction costs, negotiation costs, monitoring and oversight costs, and uncertainty in information sharing, acting as a substituting of control (Dyer and Chu, 2003). Within relational exchange theory, trust is seen critical to foster and maintain relational exchanges. It increases the probability that organizational actors will exchange information and knowledge, will be involved in joint learning processes, and will share costs for exploring and exploiting new opportunities (Inkpen, 2001; Lado et al., 2008). In operations management studies, trust is seen as significant predictor of positive outcomes in supply chains performances in terms of improved flexibility, responsiveness, and cost reduction (Handfield and Bechtel, 2002; Ireland and Webb, 2007; Laaksonen et al., 2009, Narasimhan and Nair, 2005). Trust in fact enables partners to cooperate more intensively and to engage in risk-taking initiatives. In strategic management studies, trust is recognized as a determinant of successful partnership relationships among firms, it is associated with improved adaptability and strategic flexibility, and with enhanced predictability of partners' behaviour.

In this sense, Dyer and Chu (2000), in their meritorious study, found significant levels of supplier trust in the US, Japan and Korea. These differences are related to the institutional environment. These authors

suggest that supplier trust depends on frequency and long-term interactions which they called process based trust. However, they also admit that the automaker buyers studied incur additional costs while developing this kind of relationship.

Empirical studies supported that high procurement performance can be obtained if there is close understanding and trustworthy collaboration between the supply chain partners such as suppliers and manufacturers (Eng, 2006; Li et al., 2007; Roy et al., 2004). This is because the parties can understand each other's business better and assist each other in improving the supply chain process via innovative solutions.

### **Commitment to Suppliers and Procurement Performance**

Commitment is defined as the belief that a business partner has an ongoing relationship with each other and continuous relationship, it is important to guarantee high and trying to maintain its commitment to a lasting relationship of limited help thus high procurement performance in firms (Kwon, 2004). Commitment among buyers and suppliers brings the desire to develop a stable relationship, a willingness to make short-term sacrifices to maintain the relationship, a confidence in the stability of the relationship, and investments in the relationship thus improving procurement performance (Gounaris, 2005).

Stanley, (2004) in his study argues that commitment has become an important issue in supply chain integration because effective planning is based on information shared among partners that is an essential element for the successful integration making and high procurement performance. Sharing information in certain circumstances requires the disclosure of financial information protected and other operational partners who maybe competitors in the market or in the future to become a competitor, with the expectation that supply chain partners do not misuse confidential information.

Hausman, (2010) in his study argues that committed buyer seller relationship and commitment to core concepts in various transactions between the company and its partners are considered to improve the procurement performance of a firm. To develop a lasting relationship, commitment and action in support of the transactions involved parties is required thus improving the procurement performance of a firm.

Important variable for procurement performance success is the commitment of supply chain partners willing to invest resources to achieve long-term success is sacrificing short-term interests. Organizations to establish and maintain long-term relationships if such an obligation are mutual interest income. Chen, (2011) suggests that any business transactions between supply chain partners will require sustained commitment from both

sides to achieve their common goals of the supply chain." commitment to a partner in relation to play is key to achieving favourable results for both companies, and has a direct impact on performance and positive.

### **Communication and Procurement Performance**

Effective communication is a critical component of buyer-supplier relationships. Procurement professionals utilize a variety of media to communicate with suppliers, including phone, fax, face-to-face, mail, e-mail, Internet, and electronic data interchange (EDI) thus improving procurement performance. (Rodrigo, 2001) Goodman, (2001) define communication as the formal as well as informal sharing of meaningful and timely information between firms. Cannon and Perreault (1999) suggest more open sharing of information is indicated by the willingness of both parties to share important information.

### **Cooperation and Procurement Performance**

Cooperative Procurement is a term that refers to the combining of requirements of two or more public procurement entities to leverage the benefits of volume purchases, delivery and supply chain advantages, best practices, and the reduction of administrative time and expenses thus improving procurement performance. (Benton, 2000)

According to Maloni, (2000) the power of a supplier over a retailer is increased by the level of retailer's cooperation the supplier. Cooperation results from the need to maintain the channel relationship to achieve desired goals and reflects the essentiality and replaceability of the goods and services provided by the supplier thus successful outcomes of procurement actions.

### **Research Methodology**

This study used explanatory research design, aiming at a survey of supermarket within Nairobi County. Explanatory studies are appropriate in conducting causal studies, whereby data analysis can make use of pattern-matching techniques (Tellis, 1997) and is therefore applicable to this study. The study targeted all thirty-four (34) supermarkets located in Nairobi County. The study unit of analysis was 112 procurement and sales managers. The study conducted a census survey on target population of procurement and sales managers within the 34 supermarkets. It provides a true measure of the population (no sampling error) and benchmark data may be obtained for future studies. Data will be obtained using structured questionnaires. The selection of this tool has been guided by the nature of data and the objective of the study. The study established the perceptions of the respondents and hence a Likert scale was used. A five point likert scale "1" standing for strongly Disagree (SD), "2" standing for Disagree (D), "3" for Neutral (N),

“4” standing for Agree(A) and “5” standing for Strongly Agree(SA), was used to measure the dependent and independent variables.

### **Reliability of Research Instrument**

The reliability coefficient will be calculated and a score of 0.7 was considered high enough for the instrument to be used in the study (Patton, 2002). Likert type questions will require Cronbach’s Coefficient Alpha to be calculated for each item. A reliability coefficient of 0.7 and above was assumed to reflect the internal reliability of the instruments (Fraenkel and Warren, 2000). The Cronbach’s Coefficient Alpha combines all items and advises on which item to discard in case it doesn’t capture what it is intended to capture (Neuman, 2000)

### **Measurement of Variables**

The DV in this case is indicated by two constructs namely quality and cost which will be measured using a 10 item scale as adapted from (Li et al., 2006). The items measuring quality are; the ability to offer high quality products to the customers, ability to exceed customers’ expectations, ability to deliver what their customers need, provision of tailored services/products to suit the needs, tastes, and preferences of their customers, and finally their ability to compete based on quality.

The first independent variable is inter-firm trust and was measured using 5 scale items adapted from (Doney and Cannon, 1997), the items measured whether the parties in relational exchange are genuinely concerned with each other’s success; provide best quality products in the market; keep their promises; trust the information suppliers provide; and suppliers being able to keep the buyer’s best interests in their mind.

The second variable is adapted from (Kingshott, 2006); this was measured using 5 scale items. The items assessed if, the buying firms give maximum attention to their relational exchanges; view the relationships with its major suppliers as a long-term partnership; care for relational partners; listen to suppliers’ complaints; and if buying firms are committed to their major suppliers.

The third independent variable is information sharing, it is sourced from (Anderson and Weitz, 1992). The items measured whether the buying firms let their suppliers know what they expect of them at all times; suppliers are provided with any information that might help them, relational partners keep each other informed about events or changes that may affect the other party, unforeseen challenges are properly communicated to the suppliers, and whether exchange of information takes place frequently.

## Data Analysis and Presentation

Multiple regression models is used to analyze the relationship between single dependent variable and several independent variables (Hair et al. 2005), Therefore multiple regression was applied to test the relationship between independent variables (trust, communication, cooperation, power dependence and commitment) and the dependent variable (procurement performance). The results from the analysis were presented on tables, graphs and pie charts.

The equation below was used to in the development of the research model.

$$y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

Where  $Y$  = Procurement Performance

$\alpha$  = constant (the value at which the fitted line crosses the y-axis)

$x_1$  = Trust

$x_2$  = Communication

$x_3$  = Cooperation

$x_4$  = Commitment

$\varepsilon$  = error term

$\beta_1 \dots \beta_4$  = Beta (slope; change in  $Y$  for a 1 unit change in  $X$ ). It measures the strength of

## Findings

This chapter presents the analysis of the data collected and discusses them accordingly and in relation to the research hypotheses stated with the aim of achieving the stated objectives. Results were presented for each of the theme drawn from the objectives and were interpreted and discussed The study targeted 112 respondents, but 78 managed to fill the questionnaires, the response rate yielded 78%. Comparing with other similar studies, this is an effective response rate. majority 66.7% (52) of the firms have been in operation for over 16 years hence reliable sources of information hence the firms were considered ideal for the study. In reference to the number of suppliers, all 100% (78) of the firms have above 16 suppliers. Further, on supplier-buyer relationships, 87.2% (68) of the firms have been in a supplier-buyer relationship for over 3 years, 7.7% (6) of the firms for a year and 5.1% (4) of the firms for two years.

## Descriptive statistics

The results in table 1 showed that trust among was supermarkets and their suppliers was below average ( mean=2.1795, standard deviation =0.85194) .In light of the above findings, trust which partners to cooperate more intensely and establish successful partnerships which leads to improved procurement performance was weak. More findings showed that

communication is above average (mean=4.01, standard deviation =0.86). From the aforementioned findings, it is evident that communication high between the firms and suppliers. Cooperation summed up to a mean of 3.38, standard deviation 0.94 and Skewness -0.7 indicated that cooperation has not been fully established among the organization., commitment summed up to a mean of 4.44, standard deviation 0.74, Skewness -0.7 and kurtosis 0.6. From the above findings, it is clear that there is high level of commitment among supply chain partners.

Table 1 Descriptive statistics and reliability results

	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach Alpha
Trust	2.17	0.85194	-0.7	-0.2	0.823
communication	4.01	0.86	-0.7	0.88	0.811
Cooperation	3.38	0.94	-0.7	0	0.781
Commitment	4.44	0.74	-0.6	0.6	0.711
procurement performance	4.18	0.66	-2.6	7.68	0.755

Source: Survey data (2015)

### Correlation Results

Pearson correlation analysis was conducted to examine the relationship between the variables. Table 2 represent Pearson correlation results of the study dependent and independent variables to assess the association of the variables. This was necessary to detect simple linear relationship and multicollinearity and because it also act as building block for multiple regression model (Anglim, 2007). Pearson Correlations results in table 1 showed that trust was positively and significantly correlated to procurement performance ( $r=0.753$ ,  $\rho<0.01$ ). Communication was the second component that was positively related with procurement performance ( $r=0.760$ ,  $\rho<0.01$ ). Cooperation was positively associated with procurement performance as shown by  $r = 0.649$ ,  $\rho<0.01$ . Further, commitment was positively correlated with procurement performance ( $r = 0.663$ ,  $\rho<0.01$ ). Findings provided enough evidence to suggest that there was linear relationship between trust, communication, cooperation and commitment with procurement performance.

Table 2 Correlation Results

	Procurement performance	trust	communication	cooperation	commitment
Procurement performance	1				
Trust	.753**	1			
Communication	.760**	.714**	1		
Cooperation	.649**	.488**	.632**	1	
Commitment	.663**	.574**	.552**	.445**	1

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

Source: Survey data (2015)

### **Multiple regression model/testing of hypothesis**

Findings in table 3 illustrates the model summary of multiple regression models, the results showed that the four predictors (trust, communication, cooperation and commitment) explained 74.1 percent variation of procurement performance. This showed that considering the four study independent variables, there is a probability of predicting procurement performance by 74.1% (R squared =0.741). . Durbin–Watson statistic is substantially less than 2, there is evidence of positive serial correlation, although positive serial correlation does not affect the consistency of the estimated regression coefficients, it does affect the ability to conduct valid statistical tests, as such it can be concluded that the significant statistics are valid. Study findings in ANOVA table 3 indicated that the above discussed coefficient of determination was significant as evidence of F ratio of 52.24 with p value  $0.000 < 0.05$  (level of significance). Thus, the model was fit to procurement performance using trust, communication, cooperation and commitment.

Hypothesis 1 suggested that commitment does not significantly affect procurement performance. Results in table 3 indicated that commitment had beta coefficient of  $(\beta) = 0.235$ ,  $\rho=0.003 > 0.05$ , hence hypothesis 1 does not hold. The study therefore concluded that for each unit increase in commitment, there is up to 0.235 units' increase in procurement performance. In line with the results, Gounaris, (2005) states that commitment among buyers and suppliers brings the desire to develop a stable relationship, a willingness to maintain the relationship, confidence in the stability of the relationship, and investments in the relationship thus improving procurement performance. Further support to the study is by Stanko *et al.*, (2007) who stated that commitment enables the suppliers and buyers to develop the belief that the existing relationship is important and it need maximum effort to maintain it for a long-term period hence improving the procurement performance. As well, commitment secures a relationship through its identification with and internalization of the goals and values of another party thus improving procurement performance of a firm (Kwon, 2005). In line with the results, Geffen, (2000) reports that commitment is the key driver of long-term relationship and both buyers and suppliers need to develop high levels of commitment so as to achieve sustainable competitive advantage thus improving the procurement performance. The study results are also in agreement with Stanley, (2004) study that revealed that commitment is an important issue in supply chain integration because effective planning is based on information shared among partners hence it is an essential element for the successful integration making and high procurement performance. However, there is need to conceal vital information such as financial information from operational partners who

maybe competitors in the market in the future. Moreover, lack of commitment leads to loss of efficiency and effectiveness hence the goal of supply chain risk will be found thus low procurement performance. (Snehota, 2000). As well, Hausman, (2010) in his study argues that committed buyer seller relationship contributes to improved procurement performance of a firm. From the foregoing, it is clear that commitment contributes to improved procurement performance.

Hypothesis 2 stated that communication does not significantly affect procurement performance. However, hypothesis 2 does not hold basing on findings in table 4.9 that communication beta coefficient ( $\beta$ ) = 0.258,  $\rho = 0.01 > 0.05$ . Hence the hypothesis statement is rejected. This suggests for each unit increase in communication, there is up to 0.258 increases in procurement performance. Particularly, communication is key in enhancing procurement performance. Whenever purchasing professionals utilize a variety of media to communicate with suppliers such as phone, fax, face-to-face, mail, e-mail, Internet, and electronic data interchange (EDI) there is an improvement in procurement performance (Rodrigo, 2001). Furthermore, it is only through effective communication that small firms are able to reduce inventory carrying costs and maximize profits from products provided by suppliers. Consequently, communication plays a critical role in social and business relationships since it is a powerful source of competitive advantage (Spekman et al 1999). However, lack of trust can be translated to unwillingness to share information (Fawcett and Marnan 2001). Further support to the findings of the study is by Goodman and Dion (2001) who state that effective communication in channel relationships can enhance levels of channel member coordination, satisfaction, commitment levels, and procurement performance. For instance, in fashion apparel industry, frequent communication between retailers and suppliers reduces the cost and impact of inaccurate forecasts though trust and support is essential in promoting bidirectional communication. Accordingly, Bird, (2005) states that effective communication is crucial to maintaining a long-term buyer-relationship and achieving high procurement performance.

Hypothesis 3 stipulated that cooperation has no significant effect on procurement performance. Study findings in table 4.9 reveals that cooperation recorded a beta coefficient ( $\beta$ ) of 0.224,  $\rho = 0.005 > 0.05$ , hence hypothesis 3 does not hold. Therefore, cooperation positively and significantly affects procurement performance. Thus for each unit increase in cooperation, there is up to 0.224 unit increase in procurement performance. In line with the results, Benton, (2000) echoes that cooperation makes it possible for two or more public procurement entities to benefit from the advantages of volume purchases, delivery and supply chain advantages and the reduction of administrative time and expenses thus improving

procurement performance. This is due to the fact that, when parties cooperate they are able to understand each other's expectations and need and tend to work towards achieving their mutual goal of improving their procurement performance (Perreault, 1999). Concurrently, Liu and Wang, (2000) state that cooperation maintains long-term relationships and contributes to firm's success as a result of increased procurement performance. Moreover, when cooperation is established, exchanges parties become more confident in engaging in cooperative activities and avoid opportunistic behaviors thus improve procurement performance. (Cannon, 1999). In the same way, trust is essential in heightening the relationship between communication and procurement performance, cooperative inter-business relationship is primarily based upon personal trust between business parties. As well, without close relationship, suppliers or buyers are not willing to share information and have less intention to cooperate.

Hypothesis 4 postulated that trust has no significant effect on procurement performance. Study findings in table 4.9 reveals that trust recorded a beta coefficient ( $\beta$ ) of 0.324,  $p=0.001 < 0.05$ , hence hypothesis 4 does not hold. The study therefore is justified to imply that trust positively and significantly affects procurement performance. Thus for each unit increase in trust, there is up to 0.324 unit increase in procurement performance. As a result, trust is a significant predictor of positive outcomes in supply chain performance through improved: flexibility, responsiveness, and cost reduction (Handfield and Bechtel, 2002; Ireland and Webb, 2007; Laaksonen et al., 2009, Narasimhan and Nair, 2005). In a similar vein, trust is a powerful antecedent of effective cooperation and a significant predictor of positive performance outcomes (Ireland and Webb, 2007; Laaksonen et al., 2009). Cognate to the relational exchange theory, trust makes it possible for organizational actors to exchange information and knowledge and get involved in joint learning process and shared costs for exploring and exploiting new opportunities (Inkpen, 2001; Lado et al., 2008). Within the context of transaction cost economics theory, trust is of economic value since it reduces transaction costs, negotiation costs, monitoring and oversight costs, and uncertainty in information sharing, acting as a substituting of control (Dyer and Chu, 2003). In conformity with the results, Johnston et al, (2004) asserts that trust is a key factor in the development of partnerships among the different agents of a supply chain, distinguished between interpersonal and inter-firm trust hence high procurement performance (Johnston, Mccutcheon, Stuart, & Kerwood, 2004). Furthermore, empirical studies show that high procurement performance can be obtained if there is close understanding and trustworthy collaboration between the supply chain partners such as suppliers and manufacturers (Eng, 2006; Li et al., 2007; Roy et al., 2004).

Table 3 Test of hypothesis

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	0.818	0.242		3.38	0.001		
Commitment	0.175	0.056	0.235	3.107	0.003	0.618	1.617
Communication	0.206	0.078	0.258	2.646	0.01	0.374	2.671
Cooperation	0.211	0.073	0.224	2.876	0.005	0.587	1.703
Trust	0.272	0.075	0.324	3.627	0.001	0.443	2.257
R Square	0.741						
Adjusted R Square	0.727						
Durbin-Watson	1.319						
F	52.24						
Sig.	0						

a Dependent Variable: procurement performance

Source: Survey data (2015)

### Conclusion and recommendations

The study results also showed that commitment positively and significantly affects procurement performance. Particularly, the relationship that the firm has with major suppliers is a long term partnership that the firms are very committed to. Further, communication has a positive and significant effect on procurement performance. As a result, firms let their suppliers know what they expect of them at all times and they keep each other informed about events or changes that may affect the other party. Thus, suppliers are provided with relevant information that might help them. As well, cooperation was also shown to have a positive and significant effect on procurement performance. Firms were noted to have joint development work with suppliers though sufficient efforts were not directed towards the purchasing process and joint decisions regarding the supplied materials/products. There is evidence from the study that trust has a positive and significant effect on procurement performance. Through trust, suppliers are genuinely concerned about the company and they offer the best quality product in the market.

In light of the research findings, communication, commitment, cooperation and trust have shown positive and significant effect on procurement performance, as a result, the following recommendations are made: In relation to commitment, there is need for firms to have a long term partnership with the major suppliers and aim at giving maximum attention to the relationship with suppliers so as to maintain it and enhance competitive advantage which will lead to improved procurement performance. In reference to communication, it is utmost necessary for firms to let their suppliers know what they expect of them at all times and inform them about events or changes that may affect them. Further, there is need for firms to

have frequent and timely communication with suppliers and inform them of unforeseen challenges. In regards to cooperation, there is need for firms to have joint development work with suppliers and have joint decisions with suppliers regarding the supplied materials/products. Moreover, suppliers need to be responsible for the results of the industrialization and manufacturing process of the supplied part. In terms of trust, it is imperative for suppliers to be genuinely concerned about the company and offer the best quality product in the market. As well, there is need for mutual trust between the organizations and suppliers. Further, suppliers need to keep the promises made to the firm and offer credible information and keep the firm's best interests in mind.

This study focused on the effect of buyer-supplier relations on procurement performance. It can be replicated with a larger, more representative sample. It is also recommended that this study be replicated in different business sectors within the North-Rift region. Furthermore, it would be interesting to know whether the observed findings hold for other firms as well. More research is needed in this subject area to fully establish the effect of cooperation on procurement performance since most of the respondents were impartial on a number of factors pertaining cooperation for instance whether suppliers are responsible for the results of the industrialization and/or manufacturing process. There is also need to establish the roles of communication, trust and commitment in value-creation in strategic networks.

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# **SELF CONDEMNATION, INDEBTEDNESS AND FINANCIAL STRESS: FINDINGS OF A CROSS-SECTIONAL STUDY IN PAKISTAN**

*Syed Toqueer Akhter*

Assistant Professor of Economics at the Lahore School Of Economics

*Huda Nadeem Zaman*

Student of BSc. (Honors) Degree, Double Majors in Economics & Finance

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## **Abstract**

To determine various aspects of the Micro Economy that entails the foundation of Financial Stress arising for an individual in Pakistan. The essential focus of this study is firstly, on how behavioral factors or Personality Traits affect the degree of Financial Stress that an individual undergoes; and secondly, how conditions of Indebtedness of a person accentuate the conditions of distress. Assortments of constraints arising from Dependency burdens and Household Saving patterns that go hand-in-hand with the Economic Positionality are also brought into consideration with the help of this paper, focusing solely on results obtained for developing nations, such as Pakistan itself. Financial Stress was measured on a ten-item ordinal scale, consisting of a set of questions included in the survey questionnaire, while the preferred models used in this paper consisted of Ordered Probit and Tobit Models which estimated this cross-sectional study and the relationships of the two core variables; Self Condemnation, as well as Indebtedness with individuals' financial stress. This study therefore, was able to depict that increased levels of Self Condemnation among individuals, due to a lack of resources or income, as well as high rates of Personal Debt in proportion to Individual Incomes; both have a positive significant relationship with the level of Financial Stress that these persons undergo. Government Policies and regulations of institutions can however, have an auspicious impact on the micro level as exploitation of the underprivileged can be controlled, and benefits be provided, leading to the uplifting of distress among the population.

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**Keywords:** Financial stress, Self Condemnation, Indebtedness, Ordered Probit Model

## **Part I. Introduction**

Part I of the study discusses the synopsis of Financial stress in terms of sustainability, depth, and conditions of individual indebtedness in the form of a cross sectional establishment while preceding this, lies the discussion solely focused on the various financial institutions that provide credit and the respective exclusions and vulnerabilities constituted- based on indigenous banks. Eventually, this section will determine the relevance of the study exclusively for Pakistan, keeping in perspective, the practical importance as well as the managerial and empirical data for the country.

### **An Overview of Financial Sustainability, Financial Depth, and Indebtedness: Cross Sectional Foundation**

Pakistan, being one of the developing economies facing high rates of unremitting inflation, an instable political environment and high degree of corruption rates, has caused its inhabitants belonging to various income groups to undergo high rates of stress regarding their finances. Since Pakistan is a consumption based nation, on a micro level, it is essential to highlight the fact that majority of what the poor earns as income is being spent on food consumption solely.

Poverty, the root cause of financial stress among majority of the individuals, has unfortunately been an extreme issue in Pakistan. In addition, high rates of inflation have dug down deeper holes for the poverty stricken and the low income groups. This is mainly described as having to do with more of a societal facet, as individuals might not be able to participate in mainstream activities of the community, rather than being physically deprived (Anwar & Siddiquie, 2005)

Figure 1.1 in Appendix A, therefore illustrates the food inflation of regional countries including India, Bangladesh, Sri Lanka and Pakistan itself. According to this, in April 2014, the most recent trends available show that Pakistan had a food inflation of 9.9 percent while India's food inflation was at 9.7 percent and Bangladesh at 9.0 percent. However, one of the reasons behind the varying trends was the weather and the climatic conditions and varied patterns of consumption in the different countries, giving this study a head start in terms of the challenges that individuals had to face with respect to different levels of financial stresses.

Based on the yearly per capita income<sup>8</sup> of \$1386.2, the average monthly income prevalent in Pakistan is around Rs. 11,693.80 below which lays the low income group of individuals.

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<sup>8</sup> Economic and Social Indicators obtained from the Economic Survey of Pakistan for the years 2013-2014. Exchange rate of Rs101.25/\$.

The proverb from Anne Isabella Thackeray Ritchie's novel, *Mrs. Dymond* (1885), states "give a man a fish, and you feed him for a day; show him how to catch fish, and you feed him a lifetime." This, in fact, describes financial sustainability to a great extent. Sustainability consists of a wide range of definitions while focusing on financial sustainability and development precisely in the context of this paper, it entails with the poor faction having access to funding from the non-conventional financial sector, which as a result, has a positive, long-run impact on poverty alleviation (Ayayi & Sene, 2010). Poverty reduction and sustainability therefore, operate hand-in-hand, and are the main focus of the overall development of individual households in Pakistan where social and material exclusion have been the basic hindrance in eradicating poverty and thus, establishing financial sustainability.

Further on, shedding light over the amount of money/assets that an individual has access to, according to Jude & Chukwu (2009) as well as Kiadó (2004), financial depth and economic growth have a positive relationship and in addition, a high economic growth would resultantly escort financial development. Evidence in these studies has been provided of developing countries and so, can be applied for when interpreting financial depth conditions in Pakistan.

On the other hand, however, one of the major causes of financial stress, which may sometimes end up being fatal (P. Satish 2006), is financial indebtedness. Pakistan, constituting of a large agricultural sector, may experience the most cases of debt burdens especially as farmers tend to utilize their revenues into non-productive purposes rather than paying off their debts. Increasing family sizes, as well as increasing debt burdens in turn play a great role in this area of study.

### **Outreach of Financial Institutions, Financial Exclusion and Induced Vulnerabilities through Indigenous Banks**

Financial Institutions where play a great role in providing credit to borrowers, offering a low cost of acquiring that loan, usually behold a lengthy hassling procedure, including chances of not being lent the required amount, also place the needy in a vulnerable position. Microfinance, however, is a tool that lets the excluded individuals from formal financial systems, to acquire sources of funding in ways that are feasible for their respective exclusion and poverty states (Ayayi & Sene, 2010).

With the presence of a large number of commercial banks, Pakistan still constitutes of a large portion of traditional banking techniques, especially in the rural sector, with friends, pawn shops, and other informal institutions providing credit to the under-earners; and the ease with which loans are obtained is far greater than the formal banking institutions and their

strict terms of loan, creating a flourishing, incompetent environment for these indigenous banks. However, on the contrary, these informal financiers may also keep in mind the risk of default that they may be exposed to, the high cost of screening candidates, as well as the lack of completion, setting their interest rates at an extremely high end, exploiting the borrower even further (Stiglitz, 1990).

Moreover, individuals that require sources of financing contingencies and other unexpected expenses, either exhaust a portion of their savings or use up the funds received via ROSCAs<sup>9</sup> that nullify the immediate effect of the expense. In case of borrowing in such instances, usually, these indigenous financiers take advantage of the helpless victims by charging them with higher interest rates.

### **Research Concerns and Objectives**

This study firstly aims at testing the proposition that Self condemnation has an effect on Financial Stress faced by personnel acquiring Pakistani households. Self condemnation has been quantified through an ordinal scale. Since a negative emotional trait would add to stress, this case is also no different. Thus, a positive relationship is expected to be present between Self Condemnation and Financial Stress. In fact, our testable hypothesis states that *Self Condemnation and thus, self blame or disappointment has an insignificant impact on the cropping up of Financial Stress in individuals or not.*

In order to investigate a second proposition of whether Indebtedness has a positive and significant relationship with Financial Stress, we've quantified the debt to income ratio in the form of a ratio scale. The study is further expected to determine that an increase in the personal debt, in proportion to income, would lead to a heightened level of Financial Stress. In this case, our testable hypothesis is that *Indebtedness has an insignificant impact on the level of Financial Stress faced by individuals or not.*

However, unfortunately, Pakistan lacks sufficient research in this segment and so, since coverage of this specific topic has not been available for the case of this country, this adds to the qualification of the study of our concern and requires us to promote any findings that can be attained in the course of the research.

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<sup>9</sup>Rotating Savings and Credit Associations. These are very common associations present in developing countries. Every member of the association is to contribute and make monthly payments in a central base and every month, this collected amount is handed over to one of the members, according to their turns. This member will then be continuing their cash outflows till the end of the term but will not be receiving the collected amount.

Ulrich Scholten, "Rotating Savings and Credit Associations in Developed Countries: The German-Austrian Bausparkassen", *Journal of Comparative Economics* 28, 340-363 (2000)

## **Part II. Methodological choices**

Part II of the study discusses various researches and theories conducted by previous authors, providing a framework of analysis, in addition to the quantifications of variables and the methodological stance that has been opted for. The above aspects will all be supported by literature in this part of the paper.

### **Micro foundation of Financial Vulnerabilities**

Levels of financial stress have a varied trend in individuals belonging to different socioeconomic groups, keeping under consideration, the many factors that are responsible for this stress. May it be the individual's own lack of skills that have caused him/her to find a less suitable, low paid job, or may it be the large family size that a single entity has to earn for; financial stress tends to arise in many different forms, some of which will be discussed and given evidence for in this study.

As stated in a US economy based literature<sup>10</sup>, as the economy suffers from episodes of financial stress, individuals, households, businesses and financial institutions bear the consequences too. Since, in such circumstances, the value of assets, and thus the prices of these assets become highly volatile, this leads to a lack of confidence in individuals who then refrain from spending due to future uncertainty of wealth. The economic vulnerabilities, therefore, lead to these individuals suffering from the same financial stress side by side. On the other hand, since investors would be more willing to obtain higher levels of debt and equity during adverse economic conditions, the banks too, will be curtailing their lending to potential borrowers either by increasing interest rates that they charge on loans or by strengthening their minimum credit standards. (Lown & Morgan) Both of these methods would however, cut down the amount borrowed by individuals, thereby letting them sustain the financial stress that they face, maintaining it only by lowering their basic spending, and thus, consumption levels.

### **Personality Traits and Financial Stress**

Personality traits, in this paper, include emotional modifications that go hand-in-hand with the degree of financial stress that individuals are exposed to. According to findings of literature, similarly, stressful circumstances seem to have a major impact on individuals' health and these situations are mainly a result of cognitive and behavioral responses to

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<sup>10</sup> Craig S. Hakkio and William R. Keeton, "Financial Stress: What is it, How can it be measured, and why does it matter?", Federal Reserve Bank of Kansas City

proceedings in the real world (Kubzansky and Kawachi 2000; Gallo and Matthews 2003).

Moreover, in comparable results obtained from Marmot (2004) and Wilkison (2005), it is claimed that individuals belonging to low income divisions tend to be more vulnerable to emotionally nerve-racking situations vis-à-vis the better off income divisions. It was furthermore stated that a high level of financial stress, as well as the various episodes of being shamed due to a low social status, lead to individuals being exposed to a greater risk of suffering from psychosocial ill health, as it is intricate for them to live up to the expectations of people surrounding them in addition to their personal expectations..

A financially stressed livelihood can anticipate shameful sentiments such as self-doubt, inferiority, guilt, low-worth of self, and so on, eventually leading to a state of social exclusion (cf. Scheff 1990; Starrin et al. 2003; Marmot 2004; Sennett and Cobb 1972; Wilkinson 2005). This was further backed up by almost two centuries old suggestions of the famous Adam Smith (1776/1996) which pointed out a link between psychosocial behavior of individuals and the basic provisions of life, which if kept away from, would lead to them feeling ashamed of public encounters and appearances.

Furthermore, another study states the three major psychosocial threats to individuals arising from the work place situations leading to personal stress eventually. First, the study mentions Job insecurity as a factor that takes place in times when the businesses and industries face adverse challenges, rapidly downsizing and this causes a stream of insecurity among the labor force, also giving rise to self conscious behaviors regarding the skills that they possess and whether they might be sustainable. Second, labor intensification, takes place when the workload of every employee rises beyond a certain limit, causing a condition of overwork, leaving these individuals stressed when unable to cope with the increased pressure.

Eventually, and most importantly, the problems that individuals might face in their personal lives, affect their well-being negatively as after all the mentioned issues converge and move to one's own house either adding to frustrations and conflicts or a sense of condemnation and lack of confidence on one's own skills (Drahten & Hermann, 2007).

### **Dependency Patterns, Consumption Smoothing and Indebtedness**

Having a strong hold on cultural and traditional norms, households in Pakistan tend to follow joint-family structures which further leads to issues based on dependency. The dependency ratio, particularly concerned with in this study involves the proportion of the entire population that is aged 65+ which, according to literature presented by Leff (1969) is evidenced to have

a direct relationship with savings of households while a positive, insignificant relationship with income.

As far as impacts on savings are concerned, a previously published study stated the fact that interest rate has a reasonably low ability to manipulate savings as compared to the dependency ratio which has a remarkable effect on savings (Thanoon, Baharumshah, 2007)<sup>11</sup>

Savings, effectively, play a role in consumption smoothing as persons rely more on consumption rather than income, as stated in Ndanshau's (1998) cross-sectional study<sup>12</sup>. In times when income is at a low level, individual households sustain consumption by exhausting their savings. In addition, his results also state that the less income groups are too poor to uphold savings, possessing lesser marginal propensities to save (MPS), vis-à-vis the rich ones. Likewise, this is further reinforced by a more recent work of literature that states that individuals belonging to different income brackets tend to have different trends of consumption. While the low income group will make use of their entire income, high income groups, on the other hand, are able to hold savings in addition of what their consumption levels are (Lin, Grace, 2007)<sup>13</sup>.

Kamil (2007) states that debt has its repercussions in the society and that it should be highly discouraged. This debt has caused developing countries to abstain from investing in basic institutions such as healthcare and education, hence adding to the many reasons that lead to poverty and thus, financially stressed individuals; as parents would be unable to educate their children resulting them to be under-skilled and away from opportunities that could raise their own status; and also, make space for vulnerabilities coming from the lack of medical facilities and funds to finance any contingencies. According to the National Association for Business Economics<sup>14</sup>, the darkest clouds that envelop the entire world today include the hazard of subprime loan defaults and unwarranted indebtedness.

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<sup>11</sup> Marwan Abdul-Malik Thanoon and Ahmad Zubaidi Baharumshah (2007), "*Private Savings, Growth, Dependency Ratio and Foreign Capital: Some issues and lessons from Malaysia*", Research Center on International Cooperation of the University of Bergamo, Page 143.

<sup>12</sup> Michahel O.A. Ndanshau, "Dependency rates, poverty and saving rates in the LDCs: Evidence from cross sectional household data in Tanzani, Giordano Dell-Amore Foundation, No. 1/2 (1998), pp. 85-96

<sup>13</sup> Yijia Lin and Martin F. Grace, "Household Life Cycle Protection: Life Insurance Holdings, Financial Vulnerability, and Portfolio Implications", *The Journal of Risk and Insurance*, Vol. 74, No. 1 (Mar., 2007), pp. 141-173, American Risk and Insurance Association

<sup>14</sup> [www.nabe.com](http://www.nabe.com)

Moreover, it is claimed by similar studies<sup>15</sup> and works of literature that low intensity of Financial Stress is coupled with better standards of well being and security and so, a lower degree of stress in turn.

On the other hand, a study based on Bergemeian & Wallace's (1999) results claims that debt stress may lead to a great level of physical distress and so, individuals suffering from high amounts of debts, will certainly be more susceptible to greater health issues. Furthermore, this might not be the only effect as individuals may face additional stresses, mainly due to conflicts between spouses originating from financial concerns. The impact of indebtedness has been therefore reported to have caused couples to undergo divorces in many cases as well.

### **Data Instruments**

Questions for this study were asked directly, in the form of questionnaires as well as interviews from the survey respondents in order to answer the research objectives. In this part, we would determine the various quantifications that we found to be suitable for the measurement of our three instruments self condemnation, indebtedness and financial stress.

Self condemnation, our first key instrument, was measured by a question that asked individuals to reveal the degree to which they blamed their own lack of abilities and skills for their unsuccessful lives. This involved their personal guilt for the major reason of being under qualified, and the shame that followed in the form of financial stress. This degree of self condemnation had been quantified on a scale of 1 to 5 with 1 being the least amount of self-blame and 5 being the most.

The next key variable, Indebtedness, was measured by the ratio of debt that people held in proportion of their incomes. This was quantified in percentage forms that could help us determine the ratios that we needed for this study.

Financial Stress, our main regressor, consists various techniques of developing an index in various studies, the first of which was put forward by the economists of Bank of Canada (Illing & Liu). In this study however, the composite index was derived using ten questions stated in the questionnaires (Q80-89), measured on a Likert scale (strongly disagree; 5 strongly agree) making up an index to be used as a measure of individual financial stress.

### **Questionnaire Design, Sampling and Related Procedures**

An in-depth survey of the financial state of affairs of individuals was conducted in the form of a primary research, focusing on the microeconomic

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<sup>15</sup> Sapora Sipon, Khatijah Othman, Zulkifli Abd Ghani, Husni Mohd radzi, "The Impact of Religiosity on Financial Debt and Debt Stress", *Procedia - Social and Behavioral Sciences* 140 (2014) 300 – 306

aspects of individuals and households. The questionnaire with regard to this study has thus been structured in a way that includes 6 sections that allow the research to consider and shed light upon the demographics of respondents, their household characteristics, financial & economic factors, social & political factors, and some cognitive, habitual & physical aspects of their beings that might have had an effect on the level of Financial stress that they uphold.

The questionnaire was further shaped to accommodate for a convenience sample while anticipating the low, middle as well as the high income brackets in the form of quotas so that accurate comparisons and generalizations could be made to satisfy the scope of this research. To cater to this purpose, data for the yearly per capita income for the years 2013-2014 had been obtained via the Economic Survey of Pakistan in order to craft partitions among the various income groups and make a distinction between them.

While the designed method of conducting a survey through questionnaires might be exceedingly time-consuming and expensive, on the other hand, a lot of the potential errors have been catered to and avoided while most of the questionnaires were conducted in the form of face-to-face interviews due to barriers coming from linguistics and varying literacy trends among respondents. This further, leads to an increased effectiveness of the survey results as individuals can wholly understand the questions and the depiction of their scales. Also, data collected for this study has ended up being entirely up to date since all the procedures had been conducted in the present few months, aiding to drawing modern conclusions.

Moreover, the technique used in studying the relationships of key variables was Ordered Probit as our dependent variable i.e. Financial Stress has been present within a scale from 1 to 5.

### **Specification of Ordered Probit and Tobit Models**

The two models made use of in this study were Ordered Probit and Tobit. The essential reason lying behind our main model, Ordered Probit is that Financial Stress, the key regressand, was quantified in the form of an ordinal scale. The basic distinction, here to be mentioned is that since a binary variable has not been used, rather Financial Stress has been measured over a scale from low to high, therefore, an Ordered Probit Model has been made use of instead of a Probit Model which would strictly measure a dummy dependent variable.

Since the regressand in the Ordered Probit Model is in a continuous form, as explained previously, it means that  $y^*$  will function in an arrangement consisting of a range of  $x$  variables and an additional disturbance term. This combination is thus illustrated as follows:

$$y_i^* = x_i\beta + e_i \quad ; e_i \sim N(0,1) \text{ \& } i = 1, \dots, n \quad (1)$$

$y_i$  in equation (1) however, exists in an ordinal form acquiring values from 0 to  $s$  as demonstrated below:

$$y_i = k \quad \mu_{k-1} < y_i^* \leq \mu_k \quad \iff$$

where  $k = 0, \dots, r$  and moreover,  $\mu_{-1} = -\infty$ , and  $\mu_r = +\infty$

While in case of binary data, we study how changes in certain regressors eventually end up determining the probability of examining a specific ordinal outcome, these probabilities can be exhibited below:

$$\text{Prob [Financial Stress = 0]} = P[\mu_{-1} < y_i^* \leq \mu_0],$$

$$= P[-\infty < y_i^* \leq \mu_0],$$

$$= P[y_i^* \leq \mu_0],$$

substitution from(1),

$$= P[x_i\beta + e_i \leq \mu_0],$$

$$= P[e_i \leq \mu_0 - x_i\beta],$$

$$= \Phi(\mu_0 - x_i\beta);$$

$$\text{Prob [Financial Stress = 1]} = P[\mu_0 < y_i^* \leq \mu_1],$$

$$= P[\mu_0 < x_i\beta + e_i \leq \mu_1],$$

$$= P[\mu_0 - x_i\beta < e_i \leq \mu_1 - x_i\beta],$$

$$= \Phi(\mu_1 - x_i\beta) - \Phi(\mu_0 - x_i\beta).$$

The probability outcomes for the category 2, 3, 4 & 5 would be alike and so, finally, the generalized equation would look like follows:

$$P[y_i = k] = \Phi(\mu_k - x_i\beta) - \Phi(\mu_{k-1} - x_i\beta)$$

On the other hand, in the case of our competing Tobit Model, a dummy dependent variable for Financial Stress has been made use of. Following are the functions that depict both the competing models.

### Ordered Probit Model

$Y$ = Financial Stress

$X_1$ = Economic Positionality

$X_2$ = Self Condemnation

$X_3$ = Terms of Loan

$X_4$ = Household Expenditure Income Ratio

$X_5$ = Personal Debt Income Ratio

$X_6$ = Household Savings

$X_7$ = Old Age Dependency Ratio

$$\text{Financial Stress} = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7) \quad (2.6.1)$$

*Financial Stress* =

$$\begin{aligned} & \beta_1 \text{Economic Positionality} + \beta_2 \text{Self Condemnation} + \\ & \beta_3 \text{Terms of Loan} + \beta_4 \text{Household Expenditure Income Ratio} + \\ & \beta_5 \text{Personal Debt Income Ratio} + \beta_6 \text{Household Savings} + \\ & \beta_7 \text{Old Age Dependency Ratio} + \mu \end{aligned} \quad (2.6.2)$$

## Competing Model Specification

### Tobit Model

Y= Dummy for Financial Stress

X<sub>1</sub>= Self Condemnation

X<sub>2</sub>= Personal Debt Income Ratio

X<sub>3</sub>= Household Savings

X<sub>4</sub>= Old Age Dependency Ratio

$$\text{Dummy for Financial Stress} = f(X_1, X_2, X_3, X_4) \quad (2.6.3)$$

*Financial Stress* =

$$\alpha_1 + \alpha_2 \text{Self Condemnation} + \alpha_3 \text{Personal Debt Income Rati} + \alpha_4 \text{Household Savings} + \alpha_4 \text{Old Age Dependency Ratio} + \mu \quad (2.6.4)$$

According to a study conducted by Yiing Jia Loke, Steven T. Yen, Andrew K.G. Tan (2010)<sup>16</sup> on Credit card holders and the card debt involved, we related their model technique and claimed that since an individual may withhold either a high amount of financial stress or low amounts of stress, a Tobit model is made use of with a binary dependent variable and varying quantifications of key regressors in order to make estimations and accommodate probable endogeneity of experiencing or not experiencing financial stress.

### Part III. Model analysis

Part III discusses the empirical findings of the study with respect to the population of Pakistan as described in the preliminary sections and moves on to justifying the relationship of various regressors with our response variable, keeping the context of Pakistan in perspective and formulating a conclusion as well as highlighting the limitations of the study.

### Survey Respondents' Profile: Key Findings

A sample of 35 individuals residing in Lahore, Pakistan from varying socioeconomic aspects of life was targeted as the basis of this study. This sample included individuals with differed genders and an age bracket from 20 till about 65, to ensure that the entire working age was covered.

Most of the respondents were married individuals with their own households to finance and dependents to support, in the form of spouses, children, siblings as well as old parents. In the duration of majority of the interviews, in addition, women claimed to work up to the age where their children would grown old, stating that the purpose of their employment was to feed the young offspring and educate them. On the other hand, the male

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<sup>16</sup> Yiing Jia Loke, Steven T. Yen, Andrew K.G. Tan, "Credit card holders, convenience users and revolvers: A tobit Model with binary selection and Ordinal Treatment", Journal of Applied Economics. Vol XIV, No. 2 (November 2011), 225-255.

population was more inclined to work till they reached the -retirement age of 60.

As mentioned in the first chapter, the average monthly income is Rs. 11,693.80, and this study involves respondents with monthly household incomes ranging from an extreme low of Rs. 6000 to an extreme high of Rs. 800,000, catering to the traits of all the individuals and their households belonging to the different income classes. In contrast, with regard to the respondent's respective incomes, about 34% of our total sample lies below the average monthly income line. However, on the bright side, some jobs provided the employees with free medical as well as bonuses and incentives for extra work hours and also, pension for old age retirees but this is alas, beyond the key interest of this study.

### Estimates of Ordered Probit and Tobit Models, Goodness of Fit and Model Consolidation Tests

Model	Ordered Probit Model	Tobit Model
Regressors	Dependent Variable: Financial Stress (1=low; 5=high)	Dependent Variable- Dummy for Financial Stress (0=low; 1=high)
	Coefficients	Coefficients
<b>Economic Positionality</b> 1=High Income; 5=Low Income	0.2263186 (0.99)	.....
<b>Self Condemnation</b> 1=Low; 5=High	0.3786508* (1.84)	0.2009735* (1.86)
<b>Terms of Loan</b> 1=Most favorable; 5=Least favorable	0.1864677 (1.08)	.....
<b>Household Expenditure Income Ratio</b>	0.6581932** (2.29)	.....
<b>Personal Debt Income Ratio</b>	3.22188* (1.73)	1.902886** (2.47)
<b>Household Savings</b>	-0.2042651** (-2.24)	-0.0990981*** (-2.77)
<b>Old Age Dependency Ratio</b>	1.778667* (1.95)	0.6057673 (1.28)
<b>Constant Term</b>	.....	0.7845719 (1.48)
<b>Number of Observations</b>	35	35
<b>Goodness of Fit Tests</b>		
<b>Log Likelihood</b>	-74.520398	-27.709792
<b>LR chi2</b>	37.28	17.80
<b>Prob &gt; chi2</b>	0.0000	0.0013
<b>Pseudo R2</b>	0.2001	0.2431
<b>Model Consolidation Tests</b>		
Breusch-pagan Test (Heteroskedasticity)	Chi2(1) = 0.02 Prob > chi2 = 0.9012	Chi2 (1) = 4.44 Prob > chi2 = 0.0352
VIF (Multicollinearity)	Mean VIF= 1.89	Mean VIF= 1.23

Note: Below the coefficient values in parenthesis we report the t-statistics \* denotes significance at 10% \*\* denotes significance at 5% \*\*\* denotes significance at 1%

The mathematical form of equation 2.6.2 is now illustrating below, the various changes that are caused by the predictors on Financial Stress, the regressand of this study after running the Ordered Probit Model:

$$\begin{aligned} \text{Financial Stress} = & 0.2263\text{EconomicPositionality} + \\ & 0.3787\text{SelfCondemnation} + 0.1865\text{TermsofLoan} + \\ & 0.6582\text{ExpenditureIncomeRatio} + 3.2219\text{DebtIncomeRatio} - 0.2043\text{Savings} \\ & + 1.7787\text{OldAgeDependencyRatio} \end{aligned}$$

Similarly, the mathematical form of equation 2.6.4 is now illustrating below, depiction of the competing Tobit Model:

$$\begin{aligned} \text{Financial Stress} = & 0.7846 + 0.2009\text{SelfCondemnation} + \\ & 1.9028\text{DebtIncomeRatio} - 0.0991\text{Savings} + 0.6058\text{OldAgeDependencyRatio} \end{aligned}$$

The tests applied in this study were the Breush-Pagan test and the VIF. Since cross-sectional studies usually face the problem of heteroskedasticity<sup>17</sup>, posing results that are biased, we therefore found it appropriate to test for the presence of heteroskedasticity to make sure our models were accurate. According to the Breush pagan test, we established looking at the chi2 value of 0.02 as opposed to the prob>chi2 value of 0.9012, that heteroskedasticity has probably not been a problem in the Ordered Probit Model. However, the presence of heteroskedasticity has been observed in the case of our alternate model, Tobit.

The Variance Inflation Factor, moreover, tests for multicollinearity<sup>18</sup> and so, according to the mean VIF of 1.89 and 1.23 in the Ordered Probit Model and the Tobit Model respectively, the presence of moderate correlation among the variables used is quite evident; however, this is not a worrisome matter and so, multicollinearity, in this study, is not an issue to be highlighted.

Below will be discussed the empirical results and findings that are in harmony with the literature presented in the previous chapter.

## Analysis of Findings

### Personality Traits and Financial Stress

The results obtained from the Ordered Probit Model depict a positive relationship between self condemnation and Financial Stress. This means that an individual blaming his lack of skills and education for the circumstances he is in will lead to an overall rise in the individual's financial stress by 38%.

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<sup>17</sup> Heteroskedasticity is a condition, especially present in cross sectional data, where the variance of data does not have a constant error term.

<sup>18</sup> Multicollinearity is a condition that has to do with the correlation between the independent variables such that in case of high correlation, it will be difficult to interpret the key regressors that are in fact affecting the regressand. Therefore, lower the correlation among the Xs, more accurate will be the model.

This relationship has further become definite as per the Tobit model where the positive relationship between the regressor and the regressand has confirmed that personality traits have a direct linkage with the occurrence of Financial Stress.

Moreover, this relationship is established by the previous works of literature and is relevant in case of Pakistan with its huge class gaps. Individuals acquiring a low status in the society due to the income level that they possess, undergo episodes of embarrassment coming from their self-conscious behavior, an inferiority complex and the treatment that they receive from the society.

In the local society of Pakistan, unfortunately, people are presented respect towards according to the wealth they possess. Employers will propagate their endless powers while employees, no matter how hard they work, will stand below the workers that earn a higher income and acquire better skills than them. This may give rise to certain insecurities and lack of a sense of belonging, which builds on to stress for the individuals due to their varying funds.

### **Indebtedness, Financial Vulnerabilities, and Financial Stresses**

According to the results of this study, Model 1 suggests that as the proportion of debt increases to a specific level of income, naturally, there will be lesser funds to finance the increased debt, eventually leading to an increased level of financial stress.

On the other hand, model 2 illustrates the probability of a individual being financially stressed or not when it is exposed to a certain number of independent variables. This model also suggests similar results according to which, as the debt to income ratio increases, the chances of the individual being financially stressed rise by 1.91.

Individuals, especially the low income group, as mentioned earlier, tend to spend most of their income for consumption purposes. However, they are usually left with insufficient funds to finance other basic necessities and therefore, opt for loans and engage themselves in the act of borrowing. This buildup of debt sometimes gets out of hand as the borrower is unable to pay back the credit lent either on time or with the high interest payment. Therefore, this situation solely leads to a high level of Financial Stress for individuals as their income is not sufficient to finance the debt that they were holding.

In reference to the above discussion, debt plays a great role in various localities of Pakistan, particularly the rural areas where agricultural loans exceed to such an extent that not only is the borrowing individual unable to pay back the loan, but also do his future generations bear this burden of indebtedness which, of course, increases in value over time as interest keeps

adding on to the principle amount. This has caused many to fall into the category of financially stresses, sadly.

### **Experimental Econometric Modeling and Other Key Regressors**

This paper consists of various other variables that have an impact on the upsurge of Financial Stress, out of which, the first one is Economic Positionality. As depicted by our model, a decrease in the economic positionality tends to raise a household's financial income as income is the main source to finance resources to cater to individuals and form divisions among the different classes. Another variable, Terms of Loan is illustrated to be less favorable in order for Financial Stress to increase. This is due to the very reason that loans would be less feasible and more costly for the needy, putting them in a difficult situation when borrowing. Third, as a household's expenditure increases for a fixed amount of income, the overall affordability goes out of hand and so, the individual, once again, has to experience high levels of stress. Then, savings, as talked about in the previous literature, seem to exist only in households that hold high incomes. Since they are the ones not spending it all on basic consumption of food solely, and instead, have enough to save for the future. Savings therefore have a negative relationship with financial stress in a sense that, as savings increase, financial stress of an individual tends to lower down.

Lastly, Old age dependency is one variable that holds somewhat great amount of weightage, especially in a joint family culture that Pakistan holds. Children, when grow up and begin to earn, are obliged to be responsible for their parents' expenses and in most cases, even live together to support them in old age. In this study, Old age dependency was measured as followed:

Old Age Dependency = Old members in the household/ Total household members

Our model thereby states that as old age dependency rises, financial stress is most likely to rise due to additional expenses.

### **Conclusion**

After standardizing a definite model to test the impact of various aspects of the micro economy on the financial situation of individuals and therefore the stress uprising due to those factors, we have been able to furnish this study to address the key variables affecting these individuals on the basis of the financial stress they undergo. The study has thus been able to draw a conclusion based on its two key regressors, Self Condemnation and Indebtedness, which have both shown a positive significant relationship with Financial Stress. Pakistan, being a developing nation, has encountered macro and micro level issues, while based on the scope of this study, due to huge gaps between the various income groups, the low income bracket has over

the years, suffered the most in terms of lack of funds, and enormous debt intake, further adding to the level of financial stress that these individuals have to face. However, the high-income bracket has faced the least amount of financial stress due to abundant wealth, savings, as well as funds in itself. This further on heightens their status in the society and builds bigger bridges between the rich and the poor, and increases the exploitation rate of the less privileged due to which the poor feel the lack of skills and opportunities that they acquire in comparison with the rich. This most definitely depicts the relationship that our second key variable, Self Condemnation has with Financial Stress. The study therefore, shows a link between all of these factors aiding to one end result, which is Financial Stress.

Pakistan being a country with a high population, and abundant resources, can therefore match the skilled workers to their jobs, and this can only be possible when a regulatory institution and policies keeping a check on corruption rates, especially that exploiting the poor in the credit providing institutions. Brick by brick, financial stress can be alleviated for individuals by giving them cash grants, unemployment insurance, and most importantly, a sense of belongingness.

### **Limitations of the Study**

Being an unsponsored student, there were a few obvious limitations to this study. Firstly, in terms of issues concerning the generalizability of this study, the sample size consisted of only 35 individuals however, these individuals were randomly chosen from different income backgrounds with, highs and lows, making it worthy of a well-generalized audience to a great extent.

Moreover, there was a language barrier in terms of getting the questionnaires filled from the respondents and so, the questions had to be narrated in the local language, Urdu, in the form of an interview for a large majority of the sample. This in turn, was very time consuming and could have invited biasness but that too, only marginally since respondents are especially hesitant to disclose information regarding their income and individual finances.

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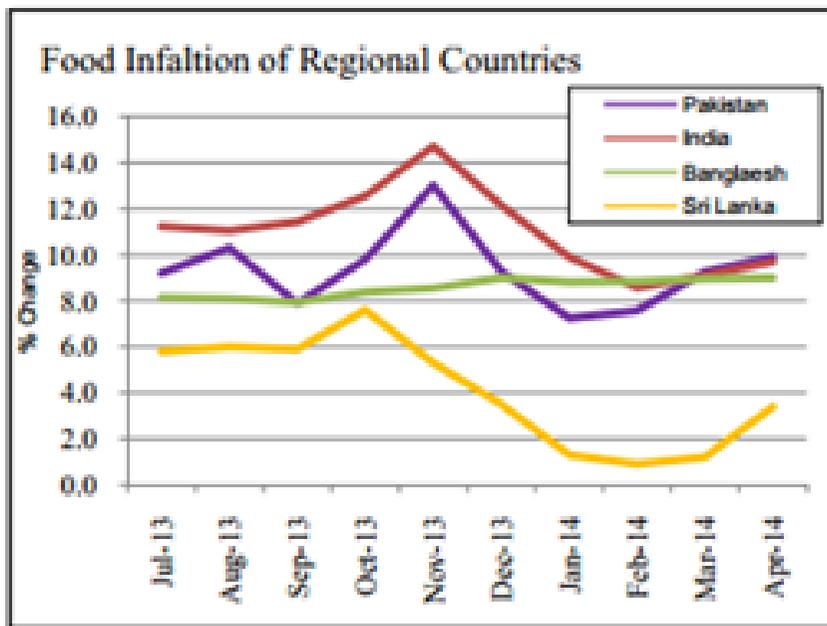
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## APPENDICES

**Appendix A : Fig 1.1- Food inflation of Regional Countries**  
(Y axis: % Change ; X axis: Time periods)



*Source: Ministry of Finance, Government of Pakistan*

# **TALENT MANAGEMENT IN HEALTHCARE SECTOR: INSIGHT INTO THE CURRENT IMPLEMENTATION IN SLOVAK ORGANIZATIONS**

*Viktória Ali Taha, PhD., Ing.*

University of Presov in Presov, Faculty of Management, Slovak Republic

*Tomáš Gajdzik, PhD., MHA, MD*

*Júlia Abu Zaid, MD*

Pavol Jozef Šafárik University in Kosice,  
Faculty of Medicine, Slovak Republic

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## **Abstract**

In today's global highly competitive marketplace, the success of the organizations is largely determined by implementation of talent management encompassing wide range of processes designed to identify, attract, develop, retain and deploy talented people with required skills. The article seeks to provide analytical insight into the talent management processes in Slovak healthcare sector. The aim of this study is on the basis of analysis of primary data collected through the questionnaire survey to examine and assess selected practices/processes of talent management in Slovak health/healthcare organizations. Using methods of inductive statistics (non-parametric Kruskal-Wallis test) we examined the existence of statistically significant differences between organizations of different size.

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**Keywords:** Healthcare, talent management, organizations, practices

## **Introduction**

The local and global success of organizations is largely determined by the ability to employ talented people (best performers) and implement talent management processes encompassing the talent identification, selection, recruitment, retention, development, deployment and other. Employers are increasingly aware of the need for talents (i.e. people who are able to ensure long-term competitiveness, sustainable prosperity and continuous development) and interested in their management, as evidenced by the volume of recent researches.

The problem is that despite the masses of unemployed, employers are experiencing talent shortages and have difficulty finding and recruiting talented employees, especially for some specific positions. In addition to this mismatch between the demand for talents and their supply there also arises a problem in workforce planning – inability to correctly anticipate future talent needs consequently inducing an inability to find the applicants with the required and/or needed skills. This situation will probably be more critical in the coming years due to the unfavorable workforce demographics and retirement of so-called baby-boomers (people born after the World War II). In this context, Biswas and Suar (2013) point out that the demand for talents has increased more rapidly than the available supply of talents and therefore talent attraction and retention has become a hard hitting issue for many organizations. According Frank and Taylor (2004) the talent management can be seen as a response to many changes in the workplace such as industrial revolution, the rise of labour unions, globalization or outsourcing. Current practice confirms the views of the authors, who already in 2004 predicted that “the real battle to attract, develop, motivate, and retain talent is going to heat up considerably” and “demographic time bomb will make talent management a top priority for organisations” (Frank & Taylor, 2004, p. 33). Nilsson and Ellström (2012, p. 27) point to the „shift from job security and lifelong employment to lifelong learning, employability, and talent management“.

Vaiman, Scullion and Collings (2012) determine key factors influencing talent management decision making in the global context:

- *talent shortages,*
- *demographics and societal trends* – declining birth rates and increasing longevity,
- *Corporate social responsibility (CSR)* – perceived as a useful tool to attract high-quality international talent,
- *diversity* – a significant factor impacting the complexity of decision making in global talent management,
- *the increasing mobility* of people across geographical and cultural boundaries,
- *permanent shift to a knowledge based economy,*
- *growing importance of emerging markets.*

### **The concept of talent management - literature review**

Talented people are considered the strategic asset of the organizations and ability to identify, recruit, retain and deploy these employees is a prerequisite for sustainable competitive advantage and success.

Talent management can be defined as the “systematic attraction, identification, development, engagement, retention and deployment of those individuals who are of particular value to an organisation, either in view of their ‘high potential’ for the future or because they are fulfilling business/operation-critical roles” (Chartered Institute of Personnel and Development (CIPD), 2013). In the broadest possible view, talent management is the strategic management of the flow of talent through an organization (Duttagupta, 2005, as cited in Iles et al., 2010).

Talent management as a part of strategic human resource management practices contributes to improvement of organizational performance (Frank & Taylor, 2004).

Iles, Preece and Chuai (2010, p. 127) citing their previous study identify „three broad strands of thought regarding talent management”:

1. Talent management is not essentially different from Human Resource Development/Management, as “both involve getting the right people in the right job at the right time and managing the supply, demand, flow and development of people through the organization” while talent management can enhance the credibility, status or “fashionability” of Human Resource Development (Lewis & Heckman, 2006, as cited in Iles et al., 2010).

2. Talent management is integrated Human Resource Development (HRD) that can use the same tools with selective focus on a relatively small segment of the workforce (talented employees) by virtue of their current performance or future potential. In this strand attracting and retaining key individuals are in the spotlight.

3. Talent management “involves organizationally focussed competence development through managing and developing flows of talent through the organization. This strand is more closely related to succession planning and human resource planning”.

When comparing talent management and Human Resource Management (HRM) Iles et al. (2010, p. 128) state that talent management “seems to promise new and rather different approaches” to the HRM while maintaining continuity with HRM. HRM has a broader scope than talent management and emphasize egalitarianism in contrast to the talent management that essentially focuses on segmentation. Another difference is focus of HRM on management functions as opposed to the focus of talent management on the people involved i.e. on the attraction, retention and development of talents.

Although organizations “tend to recognize the importance of talent management, they often fail to manage it effectively” (Scullion et al., 2007; Schuler et al., 2011; Collings et al., 2011, as cited in Vaiman, 2012). Eric Jackson (2011) defines top ten reasons why large companies lose their top talents:

1. *Big company bureaucracy*: the author considers bureaucracy the most serious reason for disenchantment of employees.
2. *Failing to find a project for the talent that ignites their passion*: top talents are usually driven not by money and power, but by the opportunity to be a part of something huge and worthwhile, “that will change the world”. HR people and bosses are usually too busy to figure out for what talented employees are really passionate.
3. *Poor annual performance reviews*: the absence of annual performance reviews or inefficiency and inconsistency in their implementation raises concerns among staff (talents) of whether the bosses (and consequently the company) are really interested in their long-term future in the organization.
4. *No discussion around career development*: the absence of discussion between talents and their employers about their future and career development is one of the reasons why they leave the organizations.
5. *Shifting whims/strategic priorities*: talented employees appreciate if their employer give them new exciting projects to work on.

### **Talent management in healthcare context**

Talent management has a significant impact on the patient safety, timely access to care, and cost control which are considered the most critical operational issues in healthcare organizations (Ogden, 2010). According NHS Leadership Academy (the purpose of which is to develop leadership in health) “talent management should consider all individuals in an organisation. It should cover the development they require, the value they bring, and the position(s) that best suit their skills currently and into the future within an organisation and/or elsewhere in their career journey. Talent and career development and maximising their potential is necessary for the retention of employees no matter what their seniority and position within the organization” (NHS Leadership Academy, 2014, p. 5).

Ogden (2010, p. 80) claims that “talent management is in crisis at many hospitals” and “the need for strong healthcare leaders and an engaged workforce is greater than ever”. The greatest problems are: shortages in clinical and nursing leadership, high staff turnover rates, retirement of executives and growing difficulty in attracting cross-industry management talents. The author is convinced that despite the “shrunk” budget is necessary to invest in developing talent because “healthcare organizations without the right processes in place to identify and develop talent will struggle to perform and compete at a high level in the new healthcare economy” (Ogden, 2010).

Effective talent management program, including internal leadership development and internal and external succession planning, can – according

– Rice and Evans (2013, p. 66) provide organizations the ability to compete. Moreover, competition in healthcare for top leaders is “fierce and will only intensify during the next few years”.

The healthcare sector is facing major shortage of talents - whether it be leadership staff, physicians or nurses. For example, Brightman (2007) sees the problems of the shortage of “talented” physicians in limited career opportunities due to relatively flat medical career ladder in most healthcare organizations. It often results in intent or decision of many physicians (at some point in their careers) to transit from clinical medicine to another “areas” - within or outside the healthcare arena. Both the results of such choices (to stay as a clinician or to leave organization) entail problems – physicians leave causes an expensive talent drain, remaining in the organization creates crowds of “stalled professionals within the organization (with all the morale and performance problems that creates)”. The creation of a “more nuanced set of transition options for physicians by using a well-validated career model for the purposes of internal staffing/succession planning” could partially eliminate these problems (Brightman, 2007, p. 27).

Lee Hecht Harrison in publication by JC Heinen (n.d.) defines three key areas of focus to effectively assess the demands on healthcare organizations:

1. succession planning - shortage of critical talent ready for key leadership positions,
2. leadership and talent development - deficiency in leadership competencies and business acumen,
3. innovation initiatives - outdated technology’s inability to serve growing need for quality care at reasonable costs.

## **Survey on talent management in Slovak healthcare**

### **Methodology**

The primary data were collected through survey (conducted in spring 2015) in the form of questionnaires. The survey covers different areas of talent management such as attraction, retention, identification, succession planning, performance management, engagement, development, career planning, deployment (of talents). Data obtained were evaluated by methods of descriptive and inductive statistics using a statistical program Statistica 12 CZ.

Research sample consists of 154 employees working in different healthcare organizations - hospitals, clinics, laboratories, etc. geographically dispersed all across the country.

In addition to the first identification items (focused on type of organization - in terms of size, form of ownership and legal form and on the respondent position/function) all questions were closed in the form of

statements using Likert scale on which respondents indicated the level of agreement or disagreement on a five-point response scale (from 1 - strongly agree to 5 - strongly disagree).

Since the spectrum of talent management processes is broad, our attention is aimed at some talent management processes. Following questionnaire questions/items were evaluated in the analysis:

- My organization creates policies that encourage career growth and development opportunities.
- The organization introduced (in written form) career and development plans of employees.
- Competences/capabilities (i.e. knowledge, skills, abilities) of employees are continuously updated and developed through education and training.
- My organization places the right people in the right jobs.
- My organization conducts formal performance appraisals on a regular basis (quarterly, biannually, annually).

Using Kruskal-Wallis we detect whether talent management individual practice/process/activity differ based on size of the organization (“small”, “medium-sized” and “big”), i.e. whether the medians for practice/process/ activity differ among organizations of different size, where: H<sub>0</sub>: the population medians are all equal and H<sub>1</sub>: the medians are not all equal.

We have been using generally accepted classification of organizations, where small is organization with 0 - 50 employees, medium size organization with 51 – 250 employees, big is organization with 251 and more employees.

## Results and findings

Kruskal-Wallis test assess for significant differences on a dependent variable (support of career growth & development) by a grouping independent variable (size). The results shows Table 1.

Table 1 Kruskal-Wallis test – variable „Support of career growth & development“

Dependent: Support of career growth & development	Kruskal-Wallis ANOVA by Ranks.; Support of career growth & development (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 150) =4,150176 p =,1255			
	Code	Valid N	Sum of Ranks	Mean of Ranks
1	1	15	1106,000	73,73333
2	2	40	2578,000	64,45000
3	3	95	7641,000	80,43158

Since  $p = 0.1255$  is greater than level of significance ( $\alpha = 0.05$ ), we fail to reject the null hypothesis. We can conclude that there are no statistically significant differences between organizations of different size in creation of policies that encourage career growth and development opportunities.

Table 2 Kruskal-Wallis test – variable „Existence of career & development plans“

Dependent: Existence of career & development plans	Kruskal-Wallis ANOVA by Ranks.; Existence of career & development plans (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 147) =1,065873 p =,5869			
	Code	Valid N	Sum of Ranks	Mean of Ranks
1	1	15	1147,500	76,50000
2	2	40	2732,000	68,30000
3	3	92	6998,500	76,07065

The p-value is greater than  $\alpha (= 0.05)$  (Table 2) that is why we fail to reject null hypothesis and conclude that there are no differences in medians for “existence of career & development plans” among organizations of different size. It should be noted that only 15% of respondents (regardless of the size of the organization) confirmed the existence of career and development plans within their organization which is highly unfavourable.

Table 3 Kruskal-Wallis test – variable „Education and training“

Dependent: Education and training	Kruskal-Wallis ANOVA by Ranks.; Education and training (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 150) =6,657834 p =,0358			
	Code	Valid N	Sum of Ranks	Mean of Ranks
1	1	15	1207,500	80,50000
2	2	40	2438,500	60,96250
3	3	95	7679,000	80,83158

Since the Kruskal-Wallis test results are significant (Table 3), post-hoc tests between pairs of samples was used to determine which pairs show significant differences (Table 4).

Table 4 Multiple Comparisons - variable „Education and training“

Dependent: Education and training		Multiple Comparisons z' values; Education and training (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 150) =6,657834 p =,0358		
		1	2	3
	R:80,500	R:60,962	R:80,832	
1		1,485319	0,027470	
2	1,485319		<b>2,426382</b>	
3	0,027470	<b>2,426382</b>		

Dependent: Education and training		Multiple Comparisons p values (2-tailed); Education and training (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 150) =6,657834 p =,0358		
		1	2	3
	R:80,500	R:60,962	R:80,832	
1		0,412378	1,000000	
2	0,412378		<b>0,045751</b>	
3	1,000000	<b>0,045751</b>		

The p-value smaller than 0.05 led us to the rejection of the null hypothesis. Multiple comparison revealed statistically significant differences in the variable “education and training for continuous update and development of employees' competences/capabilities” between medium-sized and big organizations.

Table 5 Kruskal-Wallis test – variable „Right people in the right jobs“

Dependent: Right people in the right jobs		Kruskal-Wallis ANOVA by Ranks.; Right people in the right jobs (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 148) =9,725210 p =,0077		
		Code	Valid N	Sum of Ranks
1	1	15	892,500	59,50000
2	2	40	2446,500	61,16250
3	3	93	7687,000	82,65591

Table 6 Multiple Comparisons - variable „Right people in the right jobs“

Multiple Comparisons z' values; Right people in the right jobs (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 148) =9,725210 p =,0077			
Dependent: Right people in the right jobs	1 R:59,500	2 R:61,163	3 R:82,656
1		0,128092	1,941350
2	0,128092		<b>2,651659</b>
3	1,941350	<b>2,651659</b>	
Multiple Comparisons p values (2-tailed); Right people in the right jobs (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 148) =9,725210 p =,0077			
Dependent: Right people in the right jobs	1 R:59,500	2 R:61,163	3 R:82,656
1		1,000000	0,156648
2	1,000000		<b>0,024029</b>
3	0,156648	<b>0,024029</b>	

Similar to the previous item in the variable „Right people in the right jobs“ have been revealed statistically significant differences between medium-sized and big organizations (Table 5 and Table 6).

Table 7 Kruskal-Wallis test – variable „Regular formal performance evaluation“

Kruskal-Wallis ANOVA by Ranks.; Regular formal performance evaluation (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 149) =19,12245 p =,0001				
Dependent: Regular formal performance evaluation	Code	Valid N	Sum of Ranks	Mean of Ranks
1	1	15	897,000	59,80000
2	2	40	2159,000	53,97500
3	3	94	8119,000	86,37234

Table 8 Multiple Comparisons - variable „Regular formal performance evaluation“

Multiple Comparisons z' values; Regular formal performance evaluation (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 149) =19,12245 p =,0001			
Dependent: Regular formal performance evaluation	1 R:59,800	2 R:53,975	3 R:86,372
1		0,445802	2,214512
2	0,445802		<b>3,976516</b>
3	2,214512	<b>3,976516</b>	
Multiple Comparisons p values (2-tailed); Regular formal performance evaluation (Hárok1 v TM - Statistica) Independent (grouping) variable : Size Kruskal-Wallis test: H ( 2, N= 149) =19,12245 p =,0001			
Dependent: Regular formal performance evaluation	1 R:59,800	2 R:53,975	3 R:86,372
1		1,000000	0,080381
2	1,000000		<b>0,000210</b>
3	0,080381	<b>0,000210</b>	

The Kruskal-Wallis test (p-value is less than  $\alpha = 0.05$  and subsequent post-hoc analysis revealed differences in medians between groups (specifically, medium-size and big organizations) (Tables 7 and 8). That is why we reject the null hypothesis and conclude the existence of statistically significant differences in carrying out formal performance appraisals on a regular basis (quarterly, biannually, annually) between organizations of different size.

## **Conclusion**

Through the analysis conducted, we found that the size of the organization has an impact on application of the processes and practices of talent management. Statistically significant differences were found in the area of (1) education and training for continuous update and development of employees' competences/capabilities, (2) deployment of staff (placing right people in the right jobs), and (3) execution of formal performance appraisals on a regular basis.

Apart from the size of the organization, the situation in healthcare is not ideal and may become critical. Healthcare employers pay very little attention to creation of policies that encourage career growth and development opportunities (confirmed by only 25% of affirmative answers in our survey), not to mention the career and development plans of employees where the situation is even worse. Regarding education and training, the situation is considerably better because 56% of respondents confirmed the implementation of training and development programs in their organizations. Filling key positions by highly qualified employees is not well controlled that indicates the prevalence of discordant responses (52%). Implementation of formal performance appraisals on a regular basis is greatly underestimated area since 59% of respondents disagreed with the statement. We think that without improvement of HRM and stepping up talent management implementation our hospitals and other healthcare organizations will struggle to keep valued employees. The massive outflow of skilled labor - especially physicians and nurses (to better paid positions in other countries), which we have witnessed in recent years, confirms our claim.

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# **PERCEIVED JOB INSECURITY: ITS INDIVIDUAL, ORGANISATIONAL AND SOCIETAL EFFECTS**

*Adewale, A. Adekiya*

Department of Business Administration and Entrepreneurship,  
Bayero University, Kano, Nigeria

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## **Abstract**

The concept of perceived job insecurity has been shown to be detrimental for various psychological and health-related outcomes including the effective functioning of business organizations. While most researches have examined the detrimental outcome of this workplace phenomenon from the standpoint of the individual employees and its associated organizational outcome, scanty knowledge exist on the multiplying effect of perceived job insecurity on the larger socio-economic environment and the society at large. This paper examines the overall effect of perceived job insecurity taking into consideration, its overall effects on the individual, organization, and the society. Making use of secondary data from the literature and relevant theories, it was discovered that the effect of perceived job insecurity if not properly addressed, goes beyond the enclave of employees health functioning and its associated organizational dysfunction but can also translate into various forms of adverse social and economic consequences for the society and countries at large. In view of this discovery, recommendations were made for organizations, relevant institutions and government bodies to design a framework that encompasses those institutional and organizational policies that can limit the incidence of perceived job insecurity within the workplace.

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**Keywords:** Job Insecurity, Workplace, Individual, Organization, Society

## **Introduction**

As a result of globalization, intense industry competition, deregulation, and rising cost of operation in addition to dwindling market share, companies have been forced into reconstructing their business activities as a strategic stance of staying relevant both financially and operationally. Economic slowdown has increased the need for organizational restructuring and cutback in order to save cost and survive. Thus, such

phenomena as merging, acquisition, downsizing and reorganization, which have resulted in mass layoff, have become an antidote for the realization of this feat. According to Chirumbolo (2005) these transformations have changed the nature of work and caused feelings of uncertainty, stress and anxiety for many workers about the existence and the features of their job. Hence job insecurity has been among the most investigated job stressors in recent times (Reitcher, 2001).

As posited by Kolawole, Ajani & Adisa (2013) job insecurity is the lack of assurance that an employee has about the continuity of gainful employment for his or her work life, which might arise from the terms of the contract of employment, layoffs, or the general economic conditions. Reichter (2013) noted that the negative effect of employees perceived job insecurity can be observed under two perspectives: From an individual perspective, when the health and well-being of employees may be negatively affected, and from an organizational perspective, in which work behaviors and attitudes may be affected negatively. Regardless of either of the perspectives, Chirumbolo (2005) pointed that perceived job insecurity among employees can be detrimental both to the individual and the organization as a whole.

While most previous studies have concentrated on the consequence of perceived job insecurity from the individual and organizational perspective, little efforts have been made to extend this concentration to the well being of the overall social environment despite the submission by Reitcher (2013) which indicated that the effect of job insecurity is not restricted to work settings alone but can also be detrimental on the behavior of the employees out of work settings which might likely have an effect on the larger society. Put in another way, despite the considerable theoretical and empirical progress that have been made regarding the health and organizational consequences of this phenomenon, its social and economic consequences on the larger society remains largely unexplored. Hence understanding the detrimental effect of perceived job insecurity in a broader perspective that encompasses the societal, individual and managerial settings would be an interesting area of study. This is to imply that the severity of this occupational stressor can be better understood by examining its effect on the overall well being of the society. An objective, which this paper is set out to explore. To this end, the paper aim to uncover findings which might aid policy makers, administrators, managers, in becoming aware of the magnitude of threat, being posed by this workplace syndrome, the urgent need for appropriate intervention and the relevant intervention strategies that can be employed. The subsequent sections of the paper include a review of relevant literature regarding the issues under focus, the discussion of findings, conclusions and managerial implications of findings.

## **Literature Review**

### **Perceived Job Insecurity**

With the advent of globalization, coupled with the emergence of modern day technological breakthrough, companies have been subjected to stiff operational rivalry both nationally and internationally, like never before. These global changes have called for alterations in organizations and organizational practices in order for companies to be able to survive as a result of this new context with increased competitiveness (Reitcher, 2013). According to Farber (2008) one attempt to adapt to this new phenomenon is the frequent use of privatization, mergers, acquisitions, joint ventures, and downsizing as means to compete with other organizations. Thus, businesses have become leaner and meaner by focusing on core competencies and outsourcing more peripheral functions (Burke & Cooper, 2000). In order to guarantee organizational flexibility and limit the financial and operational impact of unanticipated external changes, non-standard types of employment is used more frequently. This is to imply that there has been a departure from the use of long-term employment which was the standard previously (Millward & Brewerton, 2000). This view was complemented by Wikman (2010) who argued that the use of project and agency work as well as temporary employment is common practice among organizations today. The implication of this, as posited by Jacobson (1991) is a fundamental and involuntary change in employees sets of beliefs about the organization and their place in it.

Greenhalgh and Rosenblatt's (1984) give a definition of perceived job insecurity as perceived powerlessness to maintain desired continuity in a threatened job situation while Davy, Kinicki & Scheck (1997) gave their own definition as an individual's expectation about continuity in a job situation. According to Heaney, Israel & House (1994) job insecurity is a perception of a potential threat to continuity in one's current job. One general conclusion from these definitions is that job insecurity is perceptual in nature and it's determined by individual differences across different organizational settings. This subjective nature of job insecurity was further highlighted by Hellgren, Sverke and Isaksson (1999) who distinguished between two different forms of job insecurity: quantitative job insecurity, classifies as worrying about losing the job itself, and a qualitative job insecurity, which has to do with worrying about losing important features of the job, including job stability, positive performance appraisals and promotions (Greenhalgh and Ojedokun 2008; Jacobson 1991). In their opinion, the later refers to feelings of potential loss in the quality of organizational position, such as worsening of working conditions, lack of career opportunities and decreasing salary development. Conclusively, it is reasonable to concur that perceived job insecurity is subjective in nature and

can be influenced by situations such as organizational downsizing, restructuring and dismissals. The effect of which differs across individual as a result of personality factors.

Realizing the enormous effect that perceived job insecurity can have on individual health and the general functioning of the organizations, researches on the concept has proliferated in the past two decades. However, most findings have focused on the organizational outcome of this phenomenon without giving a proper attention to its outcome in the larger human society. Hence in this study, I investigate the overall effect of employees perceived job insecurity both at the organizational level and the societal level.

### **Consequences of Perceived Job Insecurity on the Individual**

Since an employee's perceived job insecurity can be likened to a situation that arises when there is a discrepancy between a worker's expectations regarding his job, and the actual situation regarding the job itself, it can thus be reasonably deduced that perceived job insecurity is a form of occupational stress. As confirmed by Ashford, Lee & Bobko (1989) higher feelings of job insecurity were found to correlate with poorer mental and physical health, psychological distress and burn out (Probst, 2002), worse psychological moods (Burke, 1998), lower self esteem (Kinnunen, Feldt & Mauno, 2003), life dissatisfaction (Lim, 1996), spoiled marital and family relations (Hughes & Galinsky, 1994; Westman, Etzion & Danon, 2001). Similarly, Stoner & Perrew (2006) identified the symptoms of anxiety and depression as major outcome of this phenomenon. As highlighted by Jones, Kinman, & Payne (2006) perceived job insecurity can lead to self destructive social vices as aggression, alcoholism and substance abuse.

The various health related problems that is associated with perceived job insecurity, are cardiovascular and coronary heart disease (Lee, Colditz, Berkman, & Kawachi, 2004). Atherosclerosis (Hintsanen, 2006), dryness of throat, and overproduction acid gastric (Safaria, Outhman & Wahab (2010), body mass index, excessive sleep (Ferrie, Shipley, Marmot, Stansfeld, & Smith, 1998), and psychological morbidity among white collar workers Ferrie, Shipley, Marmot, Stansfeld, Davey, 1998). Other symptoms are decrease natural cell activity (Morikawa et al., 2005), internal fatigue (Friesen et al., 2008), arrhythmogenesis (Qureshi, 2001), and short menstrual cycle with women (Fenster et al, 1999). It has also been discovered that it significantly correlates with somatization, anxiety, anger/hostility, depression, and inter-personal sensitivity (Kuhnert & Palmer, 1989).

As being noted by Reitcher (2013) perceived job insecurity can lead to increased strain and decreased well-being for an individual. This was

complemented by (De Witte et al., 2010) who submitted that both the two facets of job insecurity (both quantitative and qualitative) can lead to serious negative outcomes which can include increased emotional exhaustion, depersonalization, psychological distress, psychosomatic complaints, and decreased personal accomplishment. Also, the submission by Cooper & Melhuish (1980) confirmed this by pointing that it can result in psychosomatic problems such as headache, fatigue and insomnia, feeling of anxiety and depression while Gazzaniga & Heatherton (2003) also posited that workers' responses to the stress of perceived job insecurity in the shorter term could be emotional (anxiety, tension, life dissatisfaction), physiological (elevated heart rate, increased catecholamine secretion) and behavioral (drug use, absenteeism, lack of concentration), while in the longer term, they admitted that the accumulation of these responses could result in more permanent and manifest adverse consequences for mental and physical health. Similarly, Cremer, & Siegel, (1990) argued that a direct link exists between perceived job insecurity and the increased occurrence of ischemic heart disease

Empirically, the longitudinal study by Sarah, Burgard, Jennie, Brand, James, & House (2009) among two nationally-representative samples of the United States population, designed to examine episodic and persistent perceived job insecurity over periods of about three years to almost a decade shows that even after adjusting for socio-demographic and job characteristics, health prior to baseline, neuroticism, hypertension, smoking status, and objective employment insecurity before baseline or over follow-up, perceived job insecurity remains a significant predictor of subsequent health with the association largely concentrated among individuals who reported persistent perceived job insecurity as compared to those who never perceived that their jobs were at risk.

### **Consequences of Perceived Job Insecurity on the Organization**

The consequences of perceived job insecurity on the individual employees have been found to exercise a multiplier effect on the both organizational performance, in addition to its profitability. For instance McCarthy (1993) reported that declining job security level show a significant relationship between organizational change and workers performance. According to Chirumbolo & Hellgren, (2003); De Witte, & Näswall (2003) a significant and negative relationship exists between higher feelings of job insecurity, and job related attitude such as job satisfaction and organizational commitment. It can also result in the intention to quit the organization (Chirumbolo & Hellgren, 2003). And work withdrawal behaviors such as absenteeism, tardiness and task avoidance (Probst, 2002a).

In the same vein, Probst (2004) reported that it can lead to workplace injury and accident, the consequential financial cost of treatment, which can contribute heavily to the overhead cost of the organization. In another attempt to relate these two concepts together, Cheng & Chan (2008) pointed that two meta-analyses on job insecurity found relations between job insecurity and the aspects of decreased job satisfaction, organizational commitment, trust, performance, job involvement, mental and physical health, which fosters absenteeism and increased turnover intention. For Chirumbolo (2005) it was empirically discovered that the perceived job insecurity of Italian workers is negatively related to their job performance however, such relationship is moderated by their degree of satisfaction with the job, and level of organizational commitment. More precisely, job insecurity exhibited its negative influence on performance only in conditions of lesser job satisfaction and lesser organizational commitment. On the contrary, when job satisfaction and organizational commitment were sufficient high, the influence of job insecurity on performance vanished. That is to say, regardless of job insecurity there is no difference in job performance rated by employees if job satisfaction and organizational commitment are high.

According to Brockner, Tyler, and Schneider (1992) and De Witte and Naswall (2003) an insecure workforce can pose problems for firms since insecurity may well cause employees to identify less with corporate objectives and may impact adversely on motivation and willingness to innovate and hence on their individual productivity. As pointed by Ashford et al. (1989) perception of job insecurity has a direct link with employee's pronounced turnover intention most especially when many viable opportunities exists outside the firm. Further, Greenhalgh and Rosenblatt (1984) admitted that such situation of increased intent to quit results in a situation, whereby the most productive employee ends up being the first to quit because of their high employability which, in addition to reduced motivation, can also jeopardize a company's productivity and competitiveness (Sutton, 1983).

Though, Sverke and Hellgren (2001) maintains that a increasing perceived job insecurity will spur the least productive employees to make greater efforts, Brockner (1990) however, concurred that it is likely that, even among such groups, the higher output achieved as a result of the increased internal pressure will be only temporary. This is to indicate that after a sharp increase in productivity, such productivity is likely to drop sharply as a result of efforts related stress according to the law of diminishing returns. In addition, Cameron, Whetten & Myung (1987) posited that the impact of perceived job insecurity extends beyond the potential redundant employee in that due to its associated withdrawal syndrome,

demoralization, resistant to change, anxiety, employee turnover, and can contribute immensely to organizational dysfunction as well. In response to this, Sydney, Dekker, & Wilmar (1995) suggested that organizations should try to reduce the incidence of perceived job insecurity or reduce its harmful effect on employees. These submissions are closely related by the argument by Rosenblatt & Ruvio (1996) who insisted that job insecurity has been found to have a direct link with increased resistance to change among employees. According to them, employees who experienced greater uncertainty about their job did not understand why the current organizational changes were needed and indicates this by low affective commitment to change. Empirically, the research by Størseth (2007) uncovered that job insecurity was associated with increased risk taking and rule breaking behavior on the job. They found that such association is being mediated by lower job satisfaction and decreased job motivation implying that a higher perceived job insecurity will lead to lower job motivation and decreased satisfaction with the job, which will consequently lead to various form organizational rebellious behavior.

### **Consequences of Perceived Job Insecurity on the Society**

According to Erlinghagen (2007) self-perceived job insecurity can in principle give rise to a number of negative consequences in various areas of social life which not only has negative consequences for individuals themselves and their families but can also give rise ultimately to high costs for society as a whole. Similarly, Benito (2006) pointed that an excessively high level of employment uncertainty can also lead to a slump in consumer spending, with its well-known negative consequences for economic development which can be in form of low national output, loss of jobs, chronic poverty and all sorts of social unrest. Economically, Pfeffer (1997) insisted that job insecurity can have effects on a larger societal level in that its associated negative health consequences on the individual employees may have to be compensated for by the welfare and healthcare systems thereby increasing the national budget and expenditure. Similarly, (Matteson & Ivancevich (1987) and Benito (2006) have related job insecurity with increased health care costs for the government, and reduced household consumption respectively. In other words, it will be reasonable to concur that when workers have the perception that their job is being characterized by insecurity, there is high tendency for them to also feel financially insecure which might consequently translate into a reduction in their rate of public spending.

Within the family settings, Barling & Mendelson (1999) insisted that evidence from research have shown that children's grades were negatively affected by their parents' job insecurity, as the parents' negative

moods and sense of injustice in the world were found to have influenced the children's outlooks, and their general functioning in the society. According to Barling & MacEwen (1992) perceived job insecurity is also associated with impaired marital functioning which might lead to domestic violence and consequently, family separation which can pose as an impediment to the proper upbringing of the children, and a greater negative consequences for the society at large.

In a multilevel study of Denmark, Osler et al. (2003) found that local levels of insecure employment are directly associated with national mortality rates. In addition, another study by Kravdal (2004) in Norway is negatively associated with fertility: birth rates in the areas where the rate of perceived unemployment among women is highest. Finally, Anderson and Gascon (2008) report that competition from foreign labor and the collective sense of insecurity is associated with a situation that resulted in United States workers having increased demands for social insurance and a subsequent increased cost for the government. Also, Billie, Meuleman and De Witte (2014) used the group conflict theory (Blalock 1967; Olzak 1992) to explain that perceived economic insecurity including that of insecure job induces ethnic competition for scarce material goods, which results in negative attitudes toward immigration most especially among individuals in vulnerable socio-economic positions: those with lower educational status and income, the unemployed, and low-skilled workers (Lancee and Pardos- Prado 2013; Kunovich 2002; Fetzer, 2012). And in countries with poor economic performance (Quillian 1995; Semyonov, Raijman and Gorodzeisky 2006). From this submission, one can safely deduce that perceived job insecurity can indirectly affect the inflow of talented and creative workers who can add creative value to national economy through the mediating power of negative attitudinal dispositions towards immigration among native group members.

According to Billie, Meuleman and De Witte (2014) the general premise upon which group conflict theory lies is that hostile attitudes toward immigration can be regarded as a defensive reaction to perceived intergroup competition for scarce goods. Since those ethnic group members who are threatened in this regard, as a result of stiff competition from immigrant are likely to develop negative attitude, which can transform into aggressive and violence behavior, one can thus extend this concept to the recent xenophobia attack in South Africa where a significant number of foreigners were attacked as a result of inter-group competition for scarce economic opportunities which later generated into a public image for the country as a whole.

Also, the Guardian online (2015) has reported that the concept of employment safety causes 45,000 suicides a year in sixty three selected countries worldwide. It went on further to report that between the year 2000

and 2011, one in five of an estimated 233,000 annual suicides was linked to perception of job related problems. In addition, the research by Laanani, Ghosn, Jouglu, & Rey (2015) among the European Union countries uncovered that a significant 0.3% overall increase in suicide rate for a 10% increase in unemployment rate exists among these countries. Though, the subject of focus in this study was actual unemployment it can however be theoretically argued that a high unemployment rate will be associated with high perception of economic and job insecurity among those that are gainfully employed. Here, I propose that high perceived job insecurity will result in negative social and economic consequences.

### **Causes of Perceived Job Insecurity**

According to Erlinghagen (2007) the drivers of perceived job insecurity can be classified under two categories: micro or individual factors (education, income, age, gender, family role expectation, size of firm, type of industry), macro factors (legislation, standards, economic environment etc.)

#### **Individual/ Micro Factors**

As posited by Erlinghagen (2007) individual resources, which have a positive or negative influence on his/her marketability should influence their perception of their own job insecurity to a considerable degree. This is to indicate that the relevant skills, experience and knowledge about the job as perceived by employees can act as a determinant of feelings of job uncertainty. For instance a highly resourceful employee with relevant skills and experience might likely feel less insecure on the job as a result of the beliefs that his is highly employable and has various other alternative employment opportunities. Thus, having inadequate skill set has been identified as a precursor of job uncertainty feelings. By corroborating this submission, Nickel and Bell (1995) says that the relatively bad employment situation of older people and unskilled workers should mean that job insecurity among these groups is also greater.

Regarding gender, Gronau (1977) argued that gender effects arising out of still existing role differences, gender-based specialization and the associated statistical discrimination against women on the job might make female to be more vulnerable and therefore have a higher feelings of not being secure on the job. The role of individual within the family has also been identified as a relevant driver of perceived job insecurity. In the opinion of Erlinghagen (2007) this can be divided into the degree of individual financial contribution to the family and the availability or non availability of children. For instance, it can be assumed that increases in the financial commitment of an individual to the family will likely have a corresponding positive impact on his/her perceived job insecurity. This assumption can

also be extended to the presence or absence of children responsibility by concluding that couples with children responsibility are likely to have more financial commitment and thus, react more to a potential job loss situation of threatening job conditions.

Another micro factor that could have a link to perceived job insecurity by Erlinghagen (2007) is individual employee's tenure on the job. He reasoned that the longer individuals remain with the same employer, the safer they should be from dismissal, and the less perception of job insecurity they are likely to experience vice versa. Some of the reasons that can be attributed to this are trust developed from a long term relationship (Rosen, 1985). And special legal regulations protecting employees with many years' tenure (OECD 2005). However, he admitted that such situation depends on the peculiarity of the employee by saying that employees who have changed employer frequently and therefore have shorter job tenures do not necessarily feel any more insecure as a result of their extensive experience in the external labor market which has led them to perceive frequent changes of job as a normal situation that simply has to be managed rather than a threat. From this, we can infer that the relationship between feeling of insecurity on the job and employment tenure seems to be moderated by the job stability of individual. However, Contrary to the submission by Erlinghagen (2007), Belot and Ermisch (2006) posited that perceived job insecurity might likely increase with a higher years of experience on the job. This, he attributed to the fact that since long serving employees are normally entitled to higher pay and entitlement, the thought of losing out on such privilege might have a pronounced effect on them than it is for newly recruited employees who have less entitlement.

In addition to the job tenure of employees, another factor that has been identified is size of firm and sector or industry type. Here, it is argued that firms with large size would tend to have enormous material and financial resources which might enable them to withstand any form of environmental pressure such as economic, political and technological shocks and thus, ensure operationally stability over time, which will in turn reduce the rate at which employees will tend to think of potential organizational dysfunction and future job loss as a possibility. Similarly, those employees whose firm's operational activities are seasonal in nature are more likely to have a higher feeling of insecurity on the job (Erlinghagen, 2007).

### **Macro Environmental Factors**

At the macro level, Erlinghagen (2007) identified two major factors which are the pattern of employment legislation and the scope of the state social protection system. He reasoned that within the labor markets that are characterized by stringent regulations against the retrenchment of workers,

such society will tend to have a lower rate of objective job insecurity and hence a lower feeling of future job loss among employees. Similarly, a society that is characterized by high social security and support for citizens is likely to have a lower level of perceived job insecurity in the sense that since the unemployed are usually provided for in such society, hence the fear of losing a present job, and its associated economic benefits might not be so evident on the employees. Thus, a loose labor law which does not ensure that the right of employees are adequately protected, and poor administration of social benefits might likely result in a higher perceived job insecurity among employees.

### **Strategies for Intervention**

Appropriate strategies that may serve as an intervention in the management of the negative outcome of perceived job insecurity can be broadly divided into two: personality trait differences and external factors. The personality traits can include self care (Mak & Mueller, 2000), self-esteem and optimism (Makikangas & Kinnunen, 2003), emotional intelligence (Jordan, Ashkanasy & Hartel, 2002), locus of control and need for security (Greenhalgh & Rosenblatt, 1984). Drawing inference from the identified factors, one can reasonably deduce that a higher level of self care which can be in the form of devoting much attention to oneself and ensuring that all necessary physiological needs that is essential to bodily well being is adequately provided for, can reduce the incidence of perceived job insecurity, or counter its damaging effects. Such needs can be in the form of good diet, adequate exercise, and periodic medical check. Regarding self esteem and optimism, since the concept of unemployment is associated with low social status and low self worth, hence the belief of a potential job loss can induce an individual to have a negative self concept, lower self esteem, and a pessimistic attitude towards life. However, an individual who have a high self esteem and is highly positive regarding future endeavors will likely feel less threatened by the belief of future job loss and thus, react less to the negative consequences that is associated with it.

Jordan, Ashkanasy, & Hartel (2002) gave a definition of emotional intelligence (EQ) as the ability to identify, use, understand, and manage emotions in positive ways to relieve stress, communicate effectively, empathize with others, overcome challenges, and defuse conflict. Studies have shown that people with emotional intelligence have greater self awareness, self management, social awareness and relationship management. In addition, they tend to possess greater mental health, exemplary job performance, and more potent leadership skills. Hence a higher level of emotional intelligence can serve as a coping strategy and can help an individual to identify and limit the negative consequences associated with

job insecurity. For instance such outcomes as anxiety, depression negative self concepts which are associated with perceived job insecurity can be easily taken care of by the possession of emotional intelligence by an individual. Similarly, the higher the need for security in an individual, the more likely he is to react to the negative consequences of perceived job insecurity. Thus, if the belief of such individual is that he is properly secured both socially and materially, he is likely to react less to threatening job position or job conditions.

The external factors as identified by the literature are social support (Lim, 1996), perceptions of process and work control (Barling & Kelloway, 1996), participations in decision processes (Parker, Chmiel & Wall, 1997), fairness of treatment and organizational justice were shown to affect work attitudes (Sverke & Hellgren, 2002). According to Buunk (1990) social support is regarded as a strong moderating variable that buffers the negative outcome of job insecurity. This view was further complemented by Vuuren (1990) who identified three major social supports: support by colleague, confidence in management, and protection by trade union. As argued by Moscovici (1984) social support from colleagues enhances the development of a system of shared beliefs or social representation which might help in reducing the negative outcome of perceived job insecurity. Regarding confidence in management, Sydney, Dekker, & Wilmar (1995) reasoned that if there is a little assurance from top management on organizational or departmental survival, the development of psychological symptoms or withdrawal behavior associated with perceived job insecurity may increase. They further admitted that if no help is offered by the union in protecting jobs or payout guarantee, the more difficult it will be to avoid the consequences of perceived job insecurity.

Overall, Hofall (1989) pointed that these three components of social support provide a viable mean by which employees can at least have the illusion that they have the control over the stressor of job insecurity. However, Buunk (1990) later refuted the above opinions by reporting a substantial number of studies which in which there is no buffering effect of social support on the perceived job insecurity stressor. The view was complemented by the empirical results uncovered by Sydney, Dekker, & Wilmar (1995) where it was discovered that no significant relationship exists between the three components of social support and job insecurity related stress among the employees of a public transport company in Australia. Their conclusion was that if social support is deficient, it can lead to such stress rather than alleviate it. Similarly, many researchers including Sydney et al. (1990) have indicated that instead of employing the use of social support as a buffering strategy, perceived job insecurity itself must be dealt

with directly for instance by appropriate human resource planning, caution recruitment, training, career counseling and career planning.

### **Discussion/Conclusions**

The objective of this paper was to identify the effect of perceived job insecurity on the overall functioning of the individual, organizational and societal functioning. From the review of relevant literature on this workplace phenomenon, it was identified that it does not only act as a precursor to both the individual worker's physiological impairment and the overall organizational dysfunction, but can also have a multiplier effect on the larger social and economic environment. Specifically, it was discovered that feelings or perception of job uncertainty is associated with various forms of physiological and psychological health related problems. It was further discovered that these adverse health conditions can either result in various life threatening situations, or overall emotional and psychological functioning of the individual. At the organizational level, perceived job insecurity is likely to result into lower job satisfaction, lower organizational commitment/citizenship, higher turnover-intention, and overall organizational productivity/profitability. Also, the social and economic implication of perceived job insecurity can range from increased national expenditure, low economic performance indicators, lower life expectancy, loss of innovative migrant and a higher suicide rate. Furthermore, the causes of perceived job insecurity can either be as a result of micro factors (individual personality, demographic factors, organizational structure, size and industry type) or macro factors (government regulations, employment law etc). Hence, the formulation and implementation of any intervention program must be carried out by giving full attention to these two critical factors.

### **Implications, Limitations and future Research Opportunities**

The findings in this study have potential implications for policy and intervention. First, any potential intervention program must be broadly divided into two: organizational based intervention, and institutional based intervention. By the former, I mean those organizational related policies which can be designed to cushion the negative effects of perceived job insecurity. Here, efforts should be made to by management in organizations to give employees the assurance that their job is secured and that the long term survival of the organization is ensured. It is thus anticipated that this will lead to the beliefs on the part of the employees that their job is not in any way, under threat, which will consequently transform into a higher self confidence and self efficacy. Similarly, a periodic training session that focuses on equipping employees with skills on emotional intelligence should

be initiated by the management of organizations. For instance if employees are in possession of a considerable level of emotional intelligence, they will be more positioned to handle any job threatening situation or its related negative outcomes. Furthermore, management of organizations must focus on improving the level of social support for employees in the workplace. Such social support might include the principle of strict adherence to organizational justice, involvement of employees in decision making, and giving the right to membership of labor union who will be in a position to advance the cause of the employees. It is assumed that the psychological feelings that this union is set out to advance such cause will go a long way in buffering the effect of this workplace stress. However, it must equally be noted that even though, these organizational based interventions can limit the negative outcome of perceived job insecurity; they are not capable of changing the actual insecure employment situation. Thus, on the overall, it is suggested that the human resources policies of the organizations should be based on careful forecasting, planning, auditing and implementing. By doing this, it assumed that the actual number of required staff, within the limit of resources of the organization will be employed by the organization at different points in times thereby eliminating or reducing the incidence of arbitrary layoff.

Furthermore, Institutional policies such as labor law that legislate against undue dismissal of employees and a social security system that emphasizes benefit packages for unemployed individuals should be employed in reducing or eliminating the incidence of this workplace phenomenon. For instance if an employees that perceives his job as being threatened equally have the belief that his economy situation is likely to be cushioned by a social security package in the case that he loses his job, the negative outcome of perceived insecurity on the job is likely to be significantly reduced. In addition to financial incentives the formulation of relevant labor laws that increases perception of job certainty for employees seems to equally be an option. For instance if employees believes that there are labor laws which that guarantee their continuity on the job, with the legal capacity to use the law court as a means of addressing any wrong doing on the part of the management, they are likely to feel more secured on the job even in adverse economic situations.

The present study has limitation in that it fails to provide sufficient empirical evidence to address the overall economic and social implication of perceived job insecurity on the society. For instance there is lack of adequate empirical data to support the argument that perceived job insecurity indeed lead to increase in unnecessary government spending, suicide rate, poverty indicators and national development. Hence, further research is needed to clarify this position on a cross country basis.

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# APPLICATION OF DISCRIMINATION PROHIBITION IN THE LABOUR LAW OF THE SLOVAK REPUBLIC<sup>19</sup>

*Marcel Dolobáč, Assistant Prof. JUDr., PhD*

Pavol Jozef Safarik University in Kosice, Faculty of Law, Slovakia

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## Abstract

In the first part of the submitted paper the author briefly describes antidiscrimination legislation in the Slovak Republic and its mutual correlation with the norms of the labour law. Simultaneously, the author points out the material nature of the prohibition of discrimination, the expression of which is the regulation of temporary positive action measures. In the second part of the article, the author contemplates the reasons for the absence of a case law of general courts in dealing with discriminatory conduct in employment relations, especially in regard to the tendencies of decision-making on claims from discriminatory conduct.

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**Keywords:** Labour rights, Labour Code, anti-discriminatory Act, adequate satisfaction

## Introduction

The principle of equal treatment represents one of the basic pillars of every democratic society, including the Slovak Republic, and we can find its establishment in many international sources of law, undoubtedly in the law of the European Union, and last but not least, the prohibition of discrimination is also an integral part of the domestic law.

No matter how precise the legal establishment is, it is no less important whether the law enforcement authorities actually transform the intent of constitution makers and legislators into real life. From the point of view of the European Union law, the principle of equal treatment belongs to those areas of legal regulation that links to the most frequent case-law of the Court of Justice of the European Union, whereby the most significant decisions have been reflected to the subsequent legal regulation of the Union

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law. However, this does not apply to Slovak practice; proceedings, the subject of which is objecting the infringement of the equal treatment principle, rarely occur.

In the submitted article, the author briefly describes the anti-discriminatory legislation in the Slovak Republic and subsequently contemplates reasons for the absence of a broader case-law of general courts towards the discriminatory conduct in employment relations, especially in regard to the tendencies of the decision making on claims from discriminatory conduct.

### **Relation of anti-discriminatory law and labour law**

The principle of equal treatment, established in all basic international human rights documents, is the basic right that belongs to all without distinction and by its nature creates an insuperable framework for the application and realization of all other basic rights, including the social rights. One cannot speak of a just application and realization of any right, unless the antidiscrimination requirement is not adhered. From the universal point of view, the prohibition of discrimination specifies and completes basic rights and liberties, including the basic social rights.

With regard to the national regulation, **the general prohibition of discriminatory conduct** is codified in the Act No. 365/2004 Coll. on Equal treatment in some areas and on protection against discrimination as amended (**antidiscrimination Act**), which creates a common legal basis for maintaining the principle of equal treatment **throughout the legal system** of the Slovak Republic, including the area of employment relations.

However, the antidiscrimination law is not the sole regulation, which establishes the prohibition of discrimination in employment relations, some aspects of the principle of equal treatment are processed in detail also directly in the basic Code of the labour law, in Act No. 311/2001 Coll. of the Labour Code as amended (hereinafter referred to as “the Labour Code”).

Antidiscrimination legal regulation of the Labour Code may be divided, with respect to the individual articles and paragraph wordings, into three fundamental areas:

- a) general prohibition of discrimination (established in Art. 1 of the Labour code in conjunction with § 13 of the Labour Code),
- b) specifically emphasized prohibition of discrimination based on sex (Art. 6 of the Labour Code and § 119a of the Labour Code),
- c) alternative treatment in regard to individual categories of disadvantaged persons (Art. 6 of the Labour Code and especially provisions of the seventh part of the Labour Code – Employer’s social policy).

The suggested theoretical-legal division is only a basic generalization or a rough draft, the ambition of which is definitely not to set exact

boundaries of selected areas of the anti-discriminatory legal regulation in employment relations, because this is not even possible.

It is necessary to apply the prohibition of discrimination **generally to all employment relations and as a general principle**, it should be reflected in all measures, decisions and instructions of the employer, not only in with performances, which have a claim-like character, but it can also be the facultative performances on the part of the employer and in relation to the employer's social policy (Barancová, Schronk 2009, Žul'ová, 2014). From this division, one may essentially deduce only that the legislator has correctly established the prohibition of discrimination into the Labour code, especially by a broadly general prohibition, (which can be observed e.g. also during listing of differentiating characters in Art. 1 of the Labour Code), whereby the law individually stresses the principle of equal treatment of men and women, ( one may object the unnecessary duplicity of the regulation hereto).

For completeness, we remark that the prohibition of discrimination is explicitly expressed in other employment regulations as well, e.g. Act No. 5/2004 Coll. on Employment services (right to have access to employment), Act No. 552/2003 Coll. on Performing work in general interest (selective procedure for the position of a head employee), Act No. 400/2009 Coll. on the State service (general prohibition of discrimination) and others.

### **Material concept of the prohibition of discrimination**

The prohibition of discrimination cannot be viewed only as a formal observation of identical behaviour under any circumstances, but in accordance with the material understanding of the non-discrimination principle as the equality of opportunities or the equality of prospects.

The fundamental contentual basis for the principle of non-discrimination is the requirement for state authorities to treat the entitled bearers of human rights

- i) equally in equal situations and
- ii) unequally in unequal situations.

This fulfils the material concept of the prohibition of discrimination. While the first principle was totally obvious from the offset of the protection of basic rights and liberties, the second developed gradually, namely under the influence of decision-making practice of Strasbourg authorities, which stated that the discrimination may also occur in the event the countries, without an objective and reasonable excuse, do not treat people in obviously unequal situations unequally, (Svák, 2006, Kmec, Kosař, Kratochvíl, Bobek, 2012).

In the concept of material equality, as opposed to the formal understanding of non-discrimination, it is assumed that certain (objectifiable) disadvantages exist, which can impede the bearer's access to exercising

rights or certain social benefits (education, access to market, etc.). In practice, this disadvantage then acts as a barrier to fair competition with other actors, not suffering from this disadvantage, and who are also competing for attaining the given rights or social goods. The concept of material equality, performed by usage of positive measures does not mean that each person belonging to the disadvantaged groups is automatically provided with the social benefit at the expense of majority. The purpose is rather to improve the inequality and thus create real conditions so that the disadvantaged person could seek given goods or the execution of rights from the same starting position (Bihariová, 2013).

Material equality, the essence of which is the equality of opportunities is inherent to several international contracts guaranteeing basic rights and liberties, such as the International Covenant on Economic, Social and Cultural Rights, the Convention on the Elimination of all Forms of Discrimination against Women and the Convention on the Protection against All Forms of Racial Discrimination.

### **Temporary positive measures as an expression of material equality**

In accordance with the material understanding of the prohibition of discrimination, to secure the equality of opportunities in practice and adherence to the principle of equal treatment, the antidiscrimination Act introduced the possibility to adopt **individual positive measures** to prohibit disadvantages related to the **racial or ethnic origin**. However, shortly after adopting the antidiscrimination Act, these provisions were assessed by the Constitutional Court of the Slovak Republic at the request of the government and with finding PL. 8/04 the Court expressed the incompatibility of at that time valid legal regulation on positive measures with Art. 1 Sec. 12. and with Art. 12 Sec. 1 first sentence and Sec. 2 of the Constitution of the Slovak Republic.

However, even after the finding of the Constitutional Court of the Slovak Republic, the legislator rightfully did not refrain from material understanding of the principle of equal treatment and related possibility of adopting temporary positive measures of equal treatment and altered the affected regulation into constitutionally compliant form by an amendment to the anti-discriminatory Act. He expanded the scope of differentiating criteria, when he determined that the temporary positive measures can be applied for the removal of disadvantages resulting not only on the grounds of racial or ethnic origin, association with ethnic minority or ethnic group, but also **on the grounds of sex and gender, age or disability**.

Nowadays, according to the valid legal regulation (§ 8a Sec. 2 of the anti-discriminatory Act) temporary positive measures are especially measures:

- a) focused on the removal of social and economic disadvantages, which disproportionately affect members of the disadvantaged groups,
- b) supporting the interest of members of the disadvantaged groups in employment, education, culture, healthcare and services,
- c) aimed at creating equality in approach to employment, education, healthcare and accommodation, especially by using targeted preparation programs for members of the disadvantaged group or by dissemination of information on these programs or possibility to apply for job positions or positions in the educational system.

Listed temporary positive measures may be adopted should

- a) there be provable inequality,
- b) the objective of the measures be the reduction or elimination of this inequality,
- c) they are appropriate and necessary to achieve set objective.

Except for these characteristics, or conditions of adoption, an inherent feature of the positive measures is their **temporary nature**; these measures can last only up to the time when the inequality, which caused their adoption, has been removed. Public administration authorities are obliged to terminate the execution of these measures after achieving a set objective (§ 8a Sec. 3 of the antidiscrimination Act).

In the end, in the broader context we note that the temporary positive measures are a natural part of legal systems and are also present in other countries (in USA they are referred to as “affirmative action“, in the union law as “positive action“.) Based on the working definition of Special Rapporteur of the UN sub-committee for the protection of human rights, Marc Bossuyt, temporary positive measures represent a “coherent package of measures of temporary character, specifically focused on correction of the position of the target group in one or several aspects of their social life, necessary to achieve the equality in practice.” Such measures are aimed at the removal of economic and social inequalities through a more equitable redistribution of positions, especially in the labour market and education (Bossuyt, 2002).

### **Claims from discriminatory conduct**

A number of substantive regulations, including the Labour Code, establish the non-discrimination principle in various extents. However, in questions related to **claims from discriminatory conduct**, all equally refer to a specific regulation, which is the mentioned antidiscrimination Act. The claims from discriminatory conduct are rarely regulated directly in the substantive regulation; in the Labour Code, this regulation is established on one hand in relation to the possibility to submit a complaint to the employer for breach of the prohibition of discrimination (§ 13 Sec. 5 LC) and on the

other hand, in case of breach of obligation during the realization of pre-contractual relations (§ 41 sec. 9 LC). However, this is supportive regulation; the essence of legal protection within the proceeding concerning issues related to the breach of the equal treatment principle can be found primarily in the antidiscrimination Act.

According to § 9 of the antidiscrimination Act, everyone has the right to equal treatment and protection against discrimination. An individual who believes that his rights, legally protected interests or liberties were infringed or are being infringed, may seek remedies in court, so that the one who did not uphold the principle of equal treatment shall:

- i) refrain from his conduct,
- ii) remedy the illegal status,
- iii) offer appropriate satisfaction or eventually compensate non-pecuniary detriment in money ,
- iv) compensate the damage.

Thus, the antidiscrimination Act lists three specific means of protection, namely by means of a) negatory claim – on refraining from illegal intervention to law, if the discriminatory intervention persists, b) restorative claim – on the correction of the illegal state and removal of consequences of illegal conduct and c) satisfaction claim – on providing adequate satisfaction.<sup>20</sup> The claim for damages is not affected by this.

### **Application issues in enforcing claims from discriminatory conduct The possibility of expressing civil “judgment of conviction“**

The question, whether the claims from anti-discriminatory conduct, as is regulated by the regulation § 9 of the antidiscrimination Act, can be understood as the **exhaustive list** or vice versa, or whether it is only a **demonstrative list**, has arisen in the decisive activity of general courts. This question was not a direct subject of court proceedings, however, the courts had to react to it, if a party to the proceedings, in the procedural status of the plaintiff, was demanding a judgment of conviction<sup>21</sup>, i.e. statement, which would state discriminatory conduct on the part of the defending party of the proceedings. Part of the decision making practice<sup>22</sup> was of the opinion that there is no legal basis, in § 9 of the antidiscrimination Act, for the

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<sup>20</sup>Compare also the reasoning of the declaration of the Supreme Court of the Slovak Republic dos. mk. 5Cdo 257/2010 of 22. February 2012.

<sup>21</sup>Of course in this context we do not mean judgments of conviction of general courts in criminal proceedings. However, we believe that this term is adequate and fitting also in case of discriminatory conduct, when the victim of discrimination demands the finding of discriminatory conduct in the judgment within the civil proceedings.

<sup>22</sup>Judgment of the County Court in Prešov dos. mk. 11Co/90/2008 of 25. August 2009 and Judgment of the County Court in Prešov dos. mk. 12Co/36/2009 of 29. September 2009.

judgment of conviction, or they demanded from the plaintiff the proof of urgent legal interest pursuant to § 80 letter c) of the Code of Civil Procedures, i.e. they were proceeding exactly like with other “standard „declaratory claims. However, in practice of the courts, there was also another opinion being used,<sup>23</sup> where the judgment of conviction in relation to the discriminatory claim was not viewed as a classic statement of declaratory claim, but as one of the forms of adequate satisfaction pursuant to § 9 of the antidiscrimination Act.

The Supreme court removed this application inconsistency and stated in its judgment<sup>24</sup> that *„claim the prosecutors used to demand for the court to determine that the principle of equal treatment has been breached is acceptable and is an adequate and effective means of expressing the breach of the principle of equal treatment, since the antidiscrimination Act provides only a demonstrative list of means for protection, the participating party can claim in court. In stating the breach of the principle of equal treatment it is not necessary to prove an urgent legal interest pursuant to § 80 let. c) C. c. p., since the court in this action does not determine whether the legal relation or law is or is not here. The infringement of these rights (principle of equal treatment) implies directly from the law.* “(Durbáková, Holubová, Ivančo, Liptáková).

### **The amount of adequate satisfaction**

Another important question is the amount of adequate satisfaction. In this point, we will try to compare the view of the European Union and the Slovak application practice on the amount of satisfaction expressed in money.

Regarding the sanctions for the breach of prohibition of discrimination, the secondary union law has stipulated for a long time that the sanctions have to be **effective, adequate** and **detering**. Newer directive 2006/54ES further adds that it is suitable to exclude in advance the setting of any upper limit for such compensation, except for cases when the employer can prove that the damage occurred to the applicant as a consequence of discrimination pursuant to this directive is only based on the fact that his application for employment has not been taken into account.

Likewise, request for effective, adequate and deterring sanctions for discriminatory action is reflected in the practice of the Court of Justice of the European Union (formerly European Court of Justice). Already, in an older

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<sup>23</sup>Compare judgment of County Court in Košice dos. mk. 1Co/334/2008 of 18. March 2010.

<sup>24</sup>Judgment of the Supreme Court of the Slovak Republic, dos. mk. 5Cdo 257/2010 of 22. February 2012.

case of Colson<sup>25</sup>, the Court of Justice stated that measures, which the member state chooses in cases of discrimination, have to lead towards actual and effective legal protection and also have to represent a truly deterring effect for the discriminating person. Except for previously stated, the Court of Justice in this case, in relation to determination of adequate satisfaction, also judged that domestic courts are obliged to interpret and apply legal regulations adopted for the purpose of implementing directives completely in accordance with the requirements of the European Union (European Communities at that time).

Based on the requirements of the union law supported by relevant court practice, adequate satisfaction, (which first corresponds to sanctions based on the antidiscrimination directives of the Union) can be attributed not only the basic **satisfaction function**, but also a **sanction function**. The sanction function of compensation means that the objective should not only be the compensation of the discriminated person, but also more importantly the punishment of the discriminating person for illegal conduct, which he has performed and which caused harm to the discriminated person and further to deter him or any other third party from repeating such a behaviour in the future (Behr, 2003). Sanction compensation (of adequate satisfaction or also damage) thus punishes and at the same time acts preventively. The language of European regulations and case-law accentuates especially the second functional element of the sanction compensation, i.e. the preventive function (“detering sanctions“). Therefore, especially the institute of financial compensation of non-pecuniary damages can be the means of protection and can create preventive effects against discrimination (Straka, 2012).

If we focus on Slovak domestic regulation, according to § 9 of the antidiscrimination Act, the injured party can claim compensation of non-pecuniary damages in money if the adequate satisfaction would not be sufficient, especially if the inability to uphold the principle of equal treatment caused **significant impairment of dignity, social authority or social application of the injured person**, this party may also claim the compensation of non-pecuniary damages in money. The sum of compensation of non-pecuniary damages will be determined by the court with respect to the severity of the instance of non-pecuniary damages and all circumstances, under which it occurred.

When deciding on adequate satisfaction, the general courts frequently point out the need to prove the impairment of dignity in a severe manner and in case this fact is not proven in their point of view, in numerous instances,

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<sup>25</sup>Decision of the European Court of Justice no. 14/83 of 10. April 1984 in the case of Sabine von Colson and Elisabeth Kamann vs. Land Nordrhein-Westfalen. Compare also the judgment of the European Court of Justice C-271/91 of 3. August 1993 in case of M. Helen Marshall vs. Southampton and South-West Hampshire Area Health Authority.

they award only an apology without compensation of non-pecuniary damages in money as an adequate satisfaction. We cannot agree with these conclusions. Understandably, the discriminatory conduct in employment relations does not occur in public, on the contrary, the conduct of discriminating person against the discriminated one is known only to a small circle of persons (e.g. colleagues of the victim of the discrimination), often, the conduct happens without public. These facts result from the nature of the matter and from circumstances of individual cases. However, this certainly cannot reduce the severity of discriminatory conduct. We express the belief that general courts, when identifying the extent or severity of impairment of dignity or social application should, in case of discriminatory action, place lower requirements than in the case of protection of personality.

### **Court fee as a barrier of submitting a discriminatory claim**

As another reason for the lower number of submissions due to alleged discrimination seems to be a higher court fee, which according to item 7b of the tariff of the Act No. 71/1992 S. on court fees and fees for abstracts from the criminal register is set in the amount of 66 Euro and 3% of the amount of awarded non-pecuniary detriment. We respect and understand the purpose of the court fee, i.e. to protect against illegitimate claims to court; on the other hand, the legislator should consider the individual nature of the discrimination action, the undesired target of which, (as opposed to conduct for protection of personality), are “weaker“ people or people of the minority representation. At the same time, one has to also consider the fact that the amount of awarded non-pecuniary amounts is also exclusively at the discretion of the court. Stated could then indicate the conclusion on setting the court fee at a flat rate irrespective of the amount of the non-pecuniary damages awarded.

### **Conclusion**

We conclude that the legal regulation of prohibition of discrimination in the Labour Code of the Slovak republic is sufficient in comprehensive understanding with the international law, especially the human rights frameworks and the law of the European Union. It represents a sufficient legal basis for its real application.

The fact that antidiscrimination claims are not numerous is certainly caused by several factors. Some of the conflicts are settled out of court, but at the same time, one has to consider that the people who are discriminated are usually not interested to enter into conflict with a person or an organization, which is based on their weaker position. In this direction, the situation could be improved by education, support of relevant non-governmental organizations, and at the same time, alteration of application

practice in the direction that the compensation should not only repair the occurred state, but simultaneously deter the discriminating person from further discrimination, eventually punishing the person for the conduct, and on the other hand, encourage people who feel discriminated to file suits to the court.

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# **THE WAY TOWARDS OPEN INNOVATION: AIRBUS MULTI-FUNCTIONAL TEAMS**

*Oihab Allal-Chérif, PhD*

Head of Operations Management and Information Systems Department  
Kedge Business School, Talence, France

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## **Abstract**

In times of crisis, innovation is a key to differentiation and thus to the survival of businesses. However, actions taken by managers to stimulate creativity are essentially within the framework of a conventional closed innovation made only internally. Yet, open innovation is a much more efficient and economical way to develop new products, new materials, new technologies and new methods. It requires that partner organizations operate in an open network in which they can work together, each bringing their expertise and talents. This is usually the purchasing function, transverse and connected to the business environment, which can best orchestrate this open innovation by selecting the best suppliers to work with them within new models of integration more or less advanced. The case study of the company Airbus, developed during a participant observation of one year, will define the role of the procurement function in this open innovation approach and the benefits, hazards and limits of this strategy. Examples of the design of the A380 and of the Technocampus EMC<sup>2</sup> environment illustrate the integrated supplier relationship management method combined with open innovation.

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**Keywords:** Open Innovation, Collaboration, Airbus, Participant observation

## **Introduction**

With the gradual concentration of business on their heart of business, the increased competitive pressure, the development of international trade and the current situation of deep economic crisis, companies must implement new differentiation strategies to remain competitive. The world economy is undergoing significant structural changes that are forcing companies to adapt and in particular to develop agility capabilities (Dameron & Torset, 2012). The corporate strategic intelligence allows them to reconfigure their organization and resources based on environmental changes and challenges they face (Barrand & Deglaine, 2013).

Economic instability destroyed businesses and entire industries, boosting competitiveness and creativity. The process of creative destruction described by Joseph Schumpeter (1942) seems to be accelerating in a race for innovation that produces killer technology at an unprecedented pace. Cost reduction and process optimization, while necessary, are not sufficient to provide leadership. New economic models must be implemented to create more sustainable value in collaboration with partners (Allal-Chérif et al., 2011). Groups of virtual businesses form competitive clusters that combine multiple links of the same value chain. These extended companies collectively seek to be the first movers in emerging markets. The co-makers or co-designers, clients and strategic suppliers, are combining their complementary specific talents to achieve all projects that would be inaccessible carried out separately (Allal-Chérif et al., 2011).

New forms of alliances are increasing, which allows them to work upstream of the value chain, while remaining in competition downstream. The sharing of resources promotes innovation and generates collective competitive advantages to distance competitors who are not involved in the partnership (Park & Gnyawali Srivastava, 2014). More generally, networks of actors cooperate with each other to create synergies, multiply their ability to innovate and benefit from the expertise of each other. Research and development efforts are shared among customers, suppliers, universities and public and private laboratories in ecosystems formed to stimulate creativity. These competitive clusters, financed with co-investments, are intended to facilitate and promote open innovation, based on the sharing and exchanges between different organizations (Chesbrough, 2003; Chesbrough, Vanhaverbeke & West, 2008).

The purchasing function is at the heart of these networks of innovative businesses. This function became strategic in all industrial sectors and is increasingly involved in joint innovation processes between companies and their integrated supply partners. Buyers become internal entrepreneurs, or intra-makers, in charge of making the technology watch, of identifying the most promising suppliers, of building lasting collaborative relationships, of controlling multicultural and multi-languages virtual networks, and of managing transversal projects (Allal-Chérif et al., 2011).

This article aims to explore the role of the procurement function in the open innovation approach in Airbus. It will therefore determine how buyers can initiate, encourage and orchestrate open innovation. In the first part, a literature review will associate the processes involved in the supply chain management with the creative process of research and development. A second part will explain the exploratory qualitative methodology based on in-depth case study of Airbus, which has adopted an approach of open innovation with strategic suppliers on a European scale. The third part will

present the case study and the main results of the participant observation. The fourth part will be devoted to the discussion and recommendations.

### **The relation between collaboration and open innovation**

Innovation is essential in today's economy, but this is not new as the economist Joseph Schumpeter had already put innovation at the heart of the concerns of managers through his theories of creative destruction and innovation clusters (Schumpeter, 1942, 1947). According to him, the conventional circuit of economy is broken through innovation. Once a product is launched and it generates profits, it attracts more and more entrepreneurs wishing to grab some market share. This leads to an increase in supply: greater competition means lower prices and margins. The end of the product life cycle is precipitated by the loss of profitability. To stop this phenomenon and continue to make profits, innovation can take five different forms: (1) the manufacture of a new product, (2) the introduction of new production technologies, (3) the creation of new markets, (4) the use of new materials or new technologies and (5) a reorganization of work processes. Schumpeter also says that such innovations usually occur in clusters, that is to say irregularly and grouped. They result from a creative process but they lead to a depression related to the destruction of old products, old technology or old markets, obsolete or unprofitable. This phenomenon is known today as the creative destruction.

The open innovation defined by Chesbrough (2003; 2008) positions the innovation process in the context of the current race for competitiveness, of increased risks related to the economic crisis and of companies focusing on their heart business. This implies the need to create alliances between players in the same value chain. The concept of open innovation was born from the observation of global multinational companies such as Xerox, IBM, Cisco and Intel. Chesbrough defines open innovation as cooperation between several companies that share resources, knowledge and skills in a creative goal. This collaboration is carried out within the framework of a market economy with a free flow of information, and a highly dominant technological dimension. The open innovation applies the principle of ODOSSOS, that is to say, open data, open source and open standards.

Chesbrough (2003) began studying some large North American companies and found that they are more efficient and have a greater capacity for innovation through new managerial practices and greater openness on their environment. Thus, the Cisco Company has outclassed Lucent because instead of investing alone in research to develop new products and services, Cisco conducted a technological and strategic watch, identified the players with the most creative potential and with a vision of the market close to their own. The group then developed many forms of relationships with these

companies: investment in joint projects, long-term partnerships, takeovers and subsidiaries. This enabled Cisco to access a considerable quantity of knowledge and expertise, as well as to conduct or take part in major projects, at a very low cost. Cisco has distanced its main rival Lucent which has spent much more money but in closed innovations that have had much less impact.

The current situation calls into question the management methods of traditional innovation. Indeed, Chesbrough notes (1) the high turnover of managers means that their knowledge is also leaving with them, (2) the life cycles of products are increasingly reduced, particularly for technology products, (3) industrial risks are higher and higher, and (4) that the product expertise is not in the business but in its suppliers and its customers. Managers are thus led both to show more humility, openness, boldness and creativity. According to Chesbrough, knowledge should no longer be considered an exclusive private property and a way to dominate competitors, but it must be shared in a network of partners involved in clusters that form an ecosystem where innovation can incubate quickly.

In this type of inter-organizational collaboration to promote open innovation, it is essential to clearly define the rules of the game ahead, especially in terms of information sharing, privacy and intellectual property, as well as to develop a common culture of innovation with partners (Saunière & Leroyer, 2012). To formalize a collaborative innovation strategy, it is advisable first (1) to make available internal resources that should not be saturated, (2) to select an area of innovation in the heart of the company's activity (3) to ensure that the research topic is mature and close to commercialization, (4) to select the actors who have complementary skills, and (5) to measure the potential for differentiation and conquest that conceals the proposed innovation (Saunière & Leroyer, 2012).

Among the various types of collaborative innovation proposed by Saunière & Leroyer (2012) is the joint innovation that is closest to the open innovation system described by Chesbrough (2003). This joint innovation can take the form of a consortium of several companies that collaborate on sustainable research programs. These same companies can also develop strategic partnerships in the form of joint ventures and invest together in companies or research laboratories that fit their target markets. They can thus prepare for the launch of new products and conquer new territories. Companies can either integrate their suppliers in design and development; either share their research teams in physical or virtual workspaces.

### **The purchasing function monitoring innovation in business**

The relationship between major clients and strategic suppliers is completely transformed, as they are now part of the extended firm, and that their future is intimately linked to its success. The bargaining relationships to

systematically reduce costs and create short-term value disappear with the pressure and destabilizing maneuvers associated. Industrial groups, whose purchasing function maturity is high enough, have understood that they had to open their environment, integrating their suppliers, establishing a partnership relationship of trust and adopting a logic of sustainable value creation through open innovation (Allal-Chérif et al., 2011).

The strategy of the purchasing function in industrial companies is to reduce the number of suppliers and to focus on long-term collaborative partnerships to collectively create patterns of differentiation and sustainable value creation. Purchasing managers use performance measure, analysis, control and coordination. They perform a technology watch to determine the strategic developments and future projects to be implemented. Their role is disconnected from the operational tasks, outsourced or entrusted for suppliers, and focused on the tactical and strategic dimensions. They must adopt a global approach, consider both customers' expectations and suppliers' expertise, involve internal and external stakeholders and build support at the highest level for their prospective vision (Allal-Chérif et al., 2011).

Chesbrough (2003) asserts that the dissemination of knowledge requires a targeted execution. You don't need the newest or the best knowledge to win. On the contrary, to win you should make the best use of internal or external knowledge, with appropriate tools, combining this knowledge creatively in new and different ways to create new products and services. The purchasing function is the function that will define the target innovation and coordinate internal and external efforts to reach it. The author also established an approach in six crucial steps to encourage open innovation. (1) First, the company must establish a strategic map that shows all existing sources of innovation in its sector. For this it is necessary to rely on traceability of past innovation, but also to consider potential future developments. (2) The second step is to establish roadmaps for analyzing how technologies are valued within the company, how they respond to the needs expressed by customers and the role they play in the sustainability of the company. (3) The company's managers must then have a prospective reflection on potential new activities to be developed. (4) The risks must be assessed and the technologies with most potential must be selected by consulting firms and internal and external research laboratories. (5) A business model in line with the proposed innovations should be built to connect the technology trends to economic outlook. (6) Finally, the company must adopt a comprehensive and long-term vision to increase the potential of innovation, scale and combine them together (Chesbrough, 2003).

### **Action research in an exploratory and prospective approach**

The objective of this research is to observe a company that practices open innovation to understand the issues involved. For this, we designed a thorough case study of open innovation at Airbus. From this case study, a number of analysis parameters will be identified and good practices will be studied. Yin (1984) explained that the number of cases was not a criterion validity of the method: it is not necessary to have a multitude of cases to identify the relevant parameters of analysis. This is less the number of cases than the methodological rigor of the construction of these cases which is decisive in the description, understanding and explanation of certain phenomena. Using multiple cases allows only reinforce the results already achieved with one.

The choice of Airbus is due to the fact that this company is the world leader in the design, production and marketing of commercial and military planes. Innovation is essential in this sector and the methods implemented at Airbus to support it have evolved since the early 2000s "In general, the case studies are the preferred strategy when the questions' how 'or' why 'arise when the researcher has little control over events and when the focus is on a contemporary phenomenon in a real life context" (Yin, 1984, 2011). That is the case here of open innovation, theory formalized by Chesbrough about ten years ago, and a very recent practice, still uncommon in most companies.

Empirical research was conducted for one year as part of an exploratory action research based on participant observation (Hatchuel & Molet, 1986). The constructivist approach focuses specifically on social interactions and processes as explanatory patterns of reality (Berger and Luckmann, 1966). The principle of "Generating theory" (Glaser & Strauss, 1967) or "building theory" (Eisenhardt, 1989) will be applied to the open innovation concept observed in the company Airbus. Grounded theory generates new theories in human and social sciences through immersion in the empirical data of existing theories regarding the observed phenomenon here open innovation. These new theories complete existing theories and explain new situations (Glaser & Strauss, 1967). Data collection has used simultaneously a wide range of complementary techniques: individual interviews, group interviews, participation in workshops, brainstorming sessions and think tanks (Miles & Huberman, 2003). The literature review was carried out gradually throughout participant observation, after an initial intensive documentation. Then, to highlight, complete and analyze the theoretical framework that has been set, interviews with two purchasing managers at Airbus were conducted.

## **Open innovation at Airbus: the A380 and the Technocampus**

Airbus is one of the four entities of Airbus Group, known as EADS between 2000 and 2013, Astrium, Cassidian and Eurocopter. Airbus represents two third of total group sales. The international origins of Airbus have been critical in its success since its creation 40 years ago by the four major industrialized countries of Europe: France, Germany, Spain and the UK. This European company has taken advantage of the best that the continent had to offer to anticipate market needs and to develop innovative products. Presented as the largest and most modern manufacturer of commercial and military aircrafts in the world on the website of Airbus Group, Airbus has more than 6,000 planes in operation. Its broad commercial range goes from small 100-seat A318 to the A380 giant of more than 800 seats in economy mode. For the military part, Airbus offers refueling and troop and equipment transport aircrafts. 90% of investments in research are related to the reduction of carbon footprint with the objectives of managing aircrafts throughout their life cycles and optimizing air traffic.

With some 69,300 employees and about 80 thousand indirect jobs, Airbus is now a global company that creates sustainable value for its customers, its suppliers, its shareholders and its employees in all countries of the world where it has invested. Airbus makes planes in France, Germany, the US, China, Japan and the Middle East. The company has branches in Hamburg, Frankfurt, Washington, Dubai, Beijing and Singapore. There are training centers in Toulouse, where is located the headquarters of the company, but also in Miami, Hamburg and Beijing, as well as offices in over 150 countries around the planet. The Airbus industrial network has expanded to include: (1) design regional offices in North America; (2) an engineering center in a joint venture in Russia; (3) other engineering centers in China and India. Airbus also relies on its partnerships and industrial cooperation with the strongest and most innovative companies in the world and a network of some 1,500 suppliers. The global dimension of Airbus and its extensive network of international suppliers pose a number of challenges in terms of sourcing and management of supply chains. The company is particularly vulnerable to unforeseen events in their environment, especially natural disasters like earthquakes. The complexity of logistics flows increase risks, communication difficulties due to the multicultural context and multi-languages and incompatibilities of data or software.

The A380 is the aircraft that can carry the most passengers. According to versions, it has a capacity of 525 to 853 passengers and has 2 complete levels of seats. It is 73 meters long, 80 meters wide, the height of a 7-storey building and is heavier, longer and taller than a Boeing 747. It is composed of revolutionary composite materials, very lightweight, very strong and very flexible, of 4 Rolls-Royce reactors 30% more powerful than

the Boeing 747, and of the most modern computerized navigation system in commercial aviation. It required an investment of 10 billion euros and represents the future of the company. Airbus anticipates a doubling of air traffic in the next 20 years and the need to carry more passengers simultaneously.

The designers who conceived the A380 were soon confronted with an obstacle: the plane was too heavy. A challenge has been organized to reduce the weight of the aircraft so that it is less than 277 tons. Other constraints were to maintain a very low rate for travelers and provide the quietest and least polluting aircraft of the world. Its 4 reactors worth 12 million euros each, the equivalent of a ton of gold, consume 1 liter of kerosene per second and are able to operate more than 13 hours. 260,000 liters of fuel are needed for the A380 to cross half the planet, or 20% more than a Boeing 747. Several technical challenges have been identified jointly by Airbus teams and its strategic suppliers to achieve performance never reached before and to perform technological prowess that seemed impossible.

Collaborative purchasing and open innovation with suppliers are controlled at the European level. The wings are made in Wales, engines in England, fuselage and the vertical part of the tail in Germany, the horizontal part of the tail in Spain, final the plane is assembled in Toulouse, France. Global coordination is also at work in the lower links of the supply chain where some suppliers apply the principles of open innovation with their own suppliers. The wings weigh 6.5 tons each and are composed of 32000 components, delivered from all continents. They are one of the most critical subassemblies of the aircraft as they must allow transporting fuel, bearing the weight of the fuselage, resisting the power of the reactors and enabling delicate and precise maneuvers of an aircraft of extraordinary dimensions.

Located near Nantes, the Airbus Technocampus EMC<sup>2</sup> is a site dedicated to R&D in which Airbus teams and several other partners, especially strategic suppliers, are involved. Their objective is the creation of new aircraft technologies to be incorporated in the different ranges of Airbus planes or integrated into the plane of the future. This research center is a leader in developing innovative technologies for the production and assembly of large parts in high performance composites. This center represented a total investment of 80 million euros and it now covers more than 19,000 square meters. Among the 160 people who worked in its creation, only 50 were employees from Airbus. The objective of the Technocampus is to create synergies and promote industrial cooperation between manufacturers and other industry members. Airbus has established 37 strategic partnerships with suppliers, SMEs and laboratories. The group has transferred €27 million in equipment and materials to Technocampus

EMC<sup>2</sup>. This collaboration between a large group of suppliers, research laboratories and local authorities is the main feature of open innovation.

Within the Technocampus EMC<sup>2</sup>, opened in September 2009, Airbus has established efficient means of research and development in technologies of pre-impregnated composites, and thermoplastic resin infusion. All these technologies have been widely used in the design of the latest long-haul aircraft of the range: the A350 XWB. Thus, Airbus develops materials for airplanes of tomorrow in collaboration with academic partners: the Ecole Centrale Nantes, the Ecole des Mines, ICAM and Polytech; industrial partners such as CETIM, Aerolia, CIMPA, Composite Tool, Daher-Socata, and Euro Engineering.

### **Discussion and recommendations**

The integration of strategic suppliers and research laboratories in new product development projects is now a recognized solution to improve the efficiency of these projects. Some suppliers are categorized as "black box": they are integrated very early and are very autonomous with a strong delegation of design, increasing the interdependence and therefore the associated level of risk. Some suppliers are "white box", integrated upstream, but with complete transparency or perceived as such in a balanced relationship, with little risk. These suppliers follow the specifications they are given and use their skills to meet the demands. The "gray box" suppliers pool their knowledge with their clients to gradually advance in the process of co-development in a context of high uncertainty.

In addition to meeting the prerequisites in terms of open innovation, we even found that through the Technocampus EMC<sup>2</sup>, the manufacturer has fully met the criteria of success of the joint innovation described by Johnsen (2009). The relevant strategic buyers have established the need to develop certain skills via external sources, adjusting the role of each supplier according to its potential and specific knowledge. These strategic suppliers were fully integrated upstream of the production chain: a common structure and transparent communication has been established. The relationship of trust created has allowed good management of the potential leak of knowledge and confidentiality of information exchanged.

Focus on managing external partnerships and supplier integration can lead to neglect internal and potential conflicts between the various departments involved in innovation. The most difficult negotiations for buyers are often conducted with other business functions. They can be very harsh as between purchasers and engineers who have very different objectives. At Airbus, the engineers wanted to buy titanium parts to withstand lightning while buyers wanted to select another height times cheaper without identifying all requirements of the design. The resolution

point was choosing not massive parts but coated titanium which reduced the material cost while meeting the safety requirements. That conflict resolution was very time consuming.

## **Conclusion**

This article has demonstrated the decisive role of the procurement function in the establishment of a process of open innovation in industrial enterprises. Buyers foster internal collaboration between the purchasing function, marketing and R&D and external collaboration with suppliers, customers and public and private research laboratories. For Airbus, this collaboration is international and spread throughout Europe in France, Great Britain, Germany and Spain. It enabled the Group to consolidate its leadership position by accumulating many decisive competitive advantages.

The involvement of suppliers in the design process allows using their expertise in materials and technologies to improve product performance while reducing development and production costs. These providers associated in the open innovation approach bring a fresh look to identify problems or potential failures before the development process is already too advanced. They make the company go out of its comfort zone and think out of the frame where it used to grow. Suppliers represent a new contribution of skills and technological knowledge needed when the priority is to develop a revolutionary innovative product or a killer technology.

When suppliers' resources are mobilized early in the design cycle, it results in a significant reduction of development costs as investments and risks are shared, as was shown in the case of the Airbus A380 and the Technocampus EMC<sup>2</sup>. The involvement of upstream suppliers also enables an earlier prototype of the product and ensures in advance the allocation of the production capacity of very busy suppliers. Open innovation helps create an ecosystem to foster creativity and inventiveness.

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# **MATERNITY AND PARENTAL LEAVE: PRESENT AND PERSPECTIVES OF LEGAL TOOLS FOR HARMONIZING PROFESSIONAL AND FAMILY LIFE IN SLOVAKIA<sup>26</sup>**

*Milena Barinková, Associate Prof., JUDr., CSc.*  
Pavol Jozef Safarik University, Faculty of Law, Slovakia

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## **Abstract**

The harmony of professional and family life is a permanent agenda item of various institutions of the European Union. Creating conditions for handling work obligations of employed parents without threatening their ability to fulfil their family obligations falls in the obligations of the member states based on minimum European legal standards. This article analyzes the effects of specific tools of employment legislation in Slovakia that aids parents of small children to combine the child care with the demands of wage labour. The results are based on an assessment of development of the current legislation, which reflects society's priorities for the realization of economic and social policy, and which stem from the evaluation of the discussion in professional literature. Emphasis is also placed on reflections of perspectives and the need of redefining the legal conditions of the maternity and parental leave. The final outputs of this paper are de lege ferenda proposals in relation to the introduction of paternity leave and adoption leave.

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**Keywords:** Harmony of professional and family life, maternity and parental leave, paternity and adoption leave, the rights of male and female employees concerning childbirth and child care

## **Introduction**

The research project examines several proposals aimed at creating a legal framework to improve social rights and working conditions among individual categories of employed wage labourers. The emphasis in this paper is placed on the social status of employed women and men taking care

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of children at the same time. The working environment, more than in the past, interferes with free time, which affects the personal life of the employee. His family frequently feels and experiences his workload and stress; demands for better performance at work are met at the expense of childcare, partner care, and the discomfort in the family results in lower job performance.

The symbiosis of work and family has a specific meaning in the Slovak environment in relation to the gender equality, since the historically rooted stereotype of separating gender roles to men and women still persists. The burden of caring for small children rests mainly with women alongside the obligations of their job. The willingness of mothers to return to work after parental leave is high, but they encounter various barriers, which frequently cause fail to return to work. Therefore, they choose to link successive parental leaves and they leave the labour market for a long term (Žofčinová, 2015). However, in general, the dual income model of a family with women working full time persists. The economical shortage in securing material conditions in young families is the main reason for voluntary or forced delay of family formation to a later date. However, there are already noticeable changes in men's willingness to increase their share in childcare through the use of available legal means e.g. maternity and parental leave. Deeply rooted cultural traditions of family organization and behaviour patterns are gradually weakening. Working mothers and stay at home fathers are not as rare and absurd situation today in Slovakia as they were only twenty years ago, but the occurrence of such is still sporadic.

The need to facilitate the parallel performance of occupational duties and the provision of education and care of children or other family members is supported in the labour legislation through legal provisions providing employees with the time off from the work, in which the employer is legally bound to excuse their work absence. In this paper, we present the legal frameworks supporting maternity and parental leave, but simultaneously, we analyze the degree of quality of the national legislation after the split of Czechoslovakia, and moreover, we consider future directions of these frameworks with regard to the minimum European standards and the development of case-law.

### **Social legislation and support of work-life balance**

The means for balancing the professional and family life are regulated through labour and social legislation, but their expansion above the minimum standards is the subject of an agreement between social partners and subject to social policy programs of employers (Tkáč 2004). Several of them are formulated as social rights of employees guaranteed by the Constitution of the Slovak republic (Constitutional Act No. 460/1992 Coll.).

If the employee exercises them, the employer is legally obliged to respect the exercise of his or her right. In addition to flexible forms of work organisations (home office, telework, job sharing), the Slovak Labour Code recognizes (Act No. 311/2001 Coll., as amended) predominantly the basic need of a woman to maternity leave related to childbirth and childcare (§ 166 Sec. 1 of the Labour Code), as well as the right of woman and men to parental leave (§ 166 Sec. 2 of the Labour Code).

**Maternity leave** is legally constructed in Slovakia as a right of a woman. The Labour Code does not require at least two weeks of mandatory leave as is required by the minimum legislative standards of the European Union. Women are not legally required to take maternity leave in contrast to a number of other countries (e.g. Sweden, Luxembourg, Belgium, Finland and others).<sup>27</sup> However, if a woman exercises her maternity leave, typically six to eight weeks before the childbirth, she cannot return to work sooner than 6 weeks after the childbirth. In the scientific professional literature in Slovakia as well as the Czech Republic, where the legal regulation of maternity leave after the split of Czechoslovakia is similar, the suitability of introducing a mandatory maternity leave is being discussed (Galvas, 2004, Barinková, 2007, Halířová, 2011).

The Slovak Labour Code insofar does not explicitly prohibit women returning to work shortly after the childbirth and does not require the employer not to assign the work to this mother. Employers are only obligated to do so only in case if the woman opts to exercise her right to maternity leave period, in the period of fourteen weeks, six of which must be after the birth as stated above. If a woman in Slovakia decides not to exercise her right to maternity leave and due to childbirth requests the use of other paid/unpaid leave, the employer does not have a legal obligation to not assign work to her in the six month period after childbirth.

The introduction of new legal obligations for subjects in private legal relations is tied to the tendency to understand these obligations as authoritative government interference in the autonomous will of individuals. In the given case, a legitimate reason was the increased health protection of working women in connection to the termination of pregnancy and childbirth that is exhausting physical and mental powers of a mother. Legal establishment of the mandatory maternity leave in multiple countries stems from the objective to protect the health of a woman, which is fully acceptable.

The basic length of maternity leave in Slovakia is 34 weeks. It increases to 37 weeks for single mothers and to 43 weeks for women who

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<sup>27</sup>The report on child-based leave policies in OECD countries is available at: <http://www.cepr.net/publications/reports/plp?highlight=WyJwYXJlbnRhbCIsImxIYXZlIiwibGVhdmUnIiwibGVhdmUncyIsInBhcmVudGFsIGxIYXZlIi0=>

gave birth to multiple children simultaneously. Such increase of the amount of maternity leave is referred to as “additional maternity leave“ in some states, which (contrary to Slovakia) also extends to include cases of premature childbirth, hospitalization of the child after birth, and the birth of a child with a disability. These situations cause immense stress to the mother, which should be compensated and mitigated by additional leave.

The minimum length of maternity leave, when exercised by woman is 14 weeks. Maternity leave is financially covered by health insurance, in the event the woman has fulfilled the conditions to claim the maternity leave, in the amount of 65% of the accounting base (gross income of the mother). Historically the benefit was paid at 55% of gross income, later raised to 60%. In 2010, the right oriented Slovak government enacted legislation to increase the paid maternity benefit by 5% annually from the 55% of the net wage up to 75% of the net wage of the mother reached prior to the commence of the maternity leave. With the ascent of the left oriented government, paradoxically, the given tendency had slow down, with the exception of 2014, when the amount of the benefit reached 65%. The interest of the state to increase the maternity benefit does not appear to be of a systematic and deliberate procedure. The present, intermittent, modifications of the benefit increase have been reasoned as to a lack of financial resources of health insurers (as a part of social insurance). However, at the time of drafting this paper, the government is proclaiming a further increase in maternity benefits starting in 2016.<sup>28</sup>

*Parental leave* has two meanings in Slovak labour legislation. The same term describes two different legal situations relating to the two types of a parental leave. Each has its own place in the Labour Code, the different function they perform, but confusion arises as the same term is used in two contexts. Often, the exact two types of parental leave can only be precisely differentiated by legal professionals.

The first type is designed for a man providing that he takes care of a newly born child; he is entitled to the same duration of leave since the childbirth (as to the mother). Financial coverage is dependent on whether the mother of the child is on maternity leave and takes the maternity benefit or parental benefit. Therefore, in the event the mother takes the maternity benefit or parental benefit, the man cannot claim the benefit. If the mother does not take the benefit, the father can claim the benefit from the health insurance, which is counter-intuitively (in case of a man) also referred to as a “maternity benefit“. The most frequent is the situation where the mother does not use her entire maternity leave, and the father takes over the care of the

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<sup>28</sup> In these last days the Slovak government has submitted a proposal to increase the maternity benefit up to 70 % of the wage of mothers.

child with full rights to the maternity benefit, and takes the benefit for 28 weeks after taking the child into his care.

The second meaning of the parental leave includes woman as well as men to its extent and allows parents to take time off for the purpose of extended care for their child. The parental leave can be taken commencing on the day when the child reaches three years of age (six years of age if the child suffers from long-term unfavourable health conditions requiring individual care). The Act allows for an agreement between the employee and the employer on taking parental leave no longer than the day the child reaches five years of age (eight in the case of long-term unfavourable health conditions). The agreement does not prolong the assigned amount of leave, it only allows the leave to be used in parts, no longer than until the day the child reaches five (eight) years of age.

Parental leave rights in Slovakia are not provided by law for the parents of same sex, which is related to the prudent attitude of the majority of society towards same sex marriage or registered partnerships.

The pecuniary compensation during the parental leave is covered by the resources of the state budget and belongs only to one of the parents in the set amount of 203.20 Euro per month. As it seems, the period of parental leave in Slovakia means a great sacrifice of both parents because the financial situation of the family abruptly decreases during this period. This lower level of parental leave benefits may place pressure on the financial situation of the family. Young families are found in many cases on the verge of the poverty line, and experience the period of babyhood with financial and spiritual restrictions. Critical attitudes have been dominating for a long time in the society towards the ignorance of a more significant financial support of parents on family leave. The situation is complicated by a lack of job opportunities for mothers with small children and insufficient capacity of existing childcare facilities. In the 1990's, during the transition to a market economy, a period marked by high increasing unemployment, the early childhood education facilities (kindergartens, day-care centres – most of them established directly by employers), as historically proven service for employed parents, were restricted or even closed. Their numerical deficit is still a serious barrier for achieving work-life balance. Their revitalization has still not taken place, even though the current government is adopting measures for their repair. Mothers in many jobs could and would want to work in flexible work environments, e.g. from home, while taking care of children. However, most employers do not sufficiently allow for mutually positive flexible working arrangements insofar and the government support and incentive for the development of these arrangements is weak. Slovakia has a great opportunity to get inspired by other states, where the offer and

development of flexible working arrangements are tied to company's tax deductions.

Mothers are therefore frequently forced to use the whole duration of parental leave, thus far without a perspective for a change of her financial coverage. Such situation can reduce their motivation to return to work; while the long-term removal from the working environment can cause professional atrophy, even the loss of qualification, as well as to weaken their self-confidence in handling the delayed return to work. There is an apparent need to search for more attractive conditions of parental leave or perhaps new forms thereof, which would support a smooth transition from fulltime childcare to resuming full time workforce. Inspiration can be drawn from models of parental (or maternity) leave in countries, where the mother can choose a quicker, thus shorter model of leave with higher financial compensation, or a slower and longer with lower financial benefit. Women would also welcome a moderate transition back to the workplace during parental leave or the present work performance in the part-time form or other form of lower extent for their employer, neither of which is allowed by current legislation.

### **Future development tendencies in parental leave**

We believe that it is not desirable to further extend the parental leave in the Slovak republic. Its long duration (up to three or six years of age of the child), can cause difficulties for women in their return to work. It is more suitable to consider the extension of the age limit of the child from five to six years until which time the parental leave can be split and used. Children at the age of six years usually start the first year of compulsory education. In our *de lege feranda* opinion, an agreement between the parent and the employer for splitting the parental leave up to the fifth (eighth) birthday of the child should be replaced in the Act with the right of the employee to do so unilaterally, while maintaining the notification period of the employer to the minimum of one month in advance.

In May of this year, the European commission issued the *Council recommendation, which relates to the national program of reforms in Slovakia for the year 2015, and by which the opinion of the Council on the program for stability of Slovakia for the year 2015 is being submitted* (COM 2015). It notes the absence of progress in the employment of women in comparison with the average of the EU, which is a consequence of insufficient quality and financial affordable childcare services, as well as the relatively long duration of the parental leave.<sup>29</sup>

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<sup>29</sup>Available at:[http://ec.europa.eu/europe2020/pdf/csr2015/csr2015\\_slovakia\\_sk.pdf](http://ec.europa.eu/europe2020/pdf/csr2015/csr2015_slovakia_sk.pdf)

The national labour legislation reflects legal standards of the directive 92/85/EHS on the Protection of mothers regarding the maternity leave, and directive 2010/18/EU on “Revised framework agreement on parental leave „regarding the parental leave. For several years, talks have been taking place between the European Commission, the EU Council of Ministers, and the European parliament about a new directive on the maternity leave. Due to reluctance of the Council and roadblocks to further progress, the European Commission withdrew the proposal in July 2015, saying that it will present a more complex framework for the improvement of the protection of mothers in the next year, easing their re-entry to the labour market and improving the work-life balance. The main reasons for failure of the new directive was the opposition of several states towards extending the minimum maternity leave from 14 to 20 weeks, introduction a 2 week paternity leave, and especially mandating financial compensation during both leaves in the amount of 100% of the income. While in some countries there is full wage compensation being disbursed, elsewhere (e.g. Slovenia) this amount has decreased to 90%.

The reactions of several MEPs and European organizations for the protection of women’s rights (e.g. EWL – European Women’s Lobby) imply the view that there is a deconstruction of rights of working women and threats to gender equality from European institutions.<sup>30</sup> Europe is facing the threat of a demographic crisis that will have dramatic negative impact on the labour market, and the entire social welfare framework and pension systems are in threat. As pointed out by some studies, a serious issue of the social policy in Slovakia is the maintenance of the relation between flexicurity and social security on the labour markets. (Janičová 2015 and Švec 2012)

Prudent and future perspective measures, including the enhancement of work and family conditions for parents of little children and the system of benefits, which would not exclude them for extended periods of time from the labour market, are motivational measures for women to return to their jobs. On the other hand, approximately a third of the EU member states consider the proposal for amending the directive on the protection of mothers as unacceptable, because the subject of the amendment falls within the national competences of the arrangement of social systems.

Unwillingness to increase the maternity benefit and the recent decrease of such benefits in Slovenia are both justified by the economic crisis and the need to introduce austerity measures. The same arguments can be heard in Slovakia in regard to implementing the *paternity leave*. Slovakia is part of a group of one quarter of EU member states, which have not introduced it yet. Employed fathers are not entitled to specific time off after

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<sup>30</sup>Available at:[www.euractiv.sk/verzia-pre-tlac/clanok/je-europska-smernica-o-materskej-dovolenke-zbytocna-byrokracia-022669#sthash.l6BsQzU8.dpuf](http://www.euractiv.sk/verzia-pre-tlac/clanok/je-europska-smernica-o-materskej-dovolenke-zbytocna-byrokracia-022669#sthash.l6BsQzU8.dpuf)  
<http://womenlobby.org/spip.php?article6775&lang=en>

the birth of their child to help the mother of the child during the first days after the birth. The Labour Code allows the employed fathers only to accompany the women to the hospital and back home from the hospital within their time-off from the work.

A society-wide discussion on the optimum setting and form of maternity and paternity leave has been lacking in Slovakia for a long time. In February 2015 MPs of the opposition political party, Christian Democratic Movement, have submitted a proposal to the parliament to introduce a one week paternity leave, with wage compensation by the employer, which the father may use within one month after the childbirth. However, the Slovak parliament rejected the proposal for the paternity leave and the sponsors subsequently withdrew the proposal. The proposed paternity leave was designed only for legally married parents and not to the father in other partnership relation to the mother. However, this limited restriction of the personal right to paternity leave was illogical. It undermines laws establishing similar treatment in employment relations regardless of marital status. It is equally unacceptable to discriminate against employees because of their performance of any obligations towards the family. Studies point to a low acceptance of a broader spectrum of models of family behaviour by Slovak legislature when considering legal tools work-life balance (Žul'ová 2013, 2014). According to the decision of the European Court for Human Rights (ECHR) in the case of Kozak v. Poland, the protection of family life under Article 8 of the European Convention also applies to same sex couples. The court confirmed that family established by marriage is not the exclusive form of family life.<sup>31</sup>

*On a similar line, the Slovak Labour Code does not regulate the adoption leave, also referred to as foster leave, as an individual type of parental leave.* However, parents who legally adopted or to which a child has been entrusted, based on the decision of the court for later adoption, are also entitled to use the institute of maternity leave and/or parental leave until reaching three/six years of age. The leave for adoption, which has been introduced in several countries, e.g. in Netherlands, is designed to meet the needs of future adoptive parents and the preparation for adoption of the parents themselves. These preparations may include visiting the appropriate authorities in the adoption process, cooperating with the authorities in verifying whether the conditions for the adoption have been met.

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<sup>31</sup>Judgment of the ECHR of 2. March 2010, No. 13102/02, in case Kozak v. Poland, Article 98

## Conclusion

The harmonization of work and family life in the Slovak republic would benefit from equalizing the legal importance of childcare while performing the job and thus reinforce the responsibility of both parents for the family. The elimination of economic dependence of women upon men, who are still viewed as breadwinners, and the abandonment of dogmatic patterns of their status and roles in the family, requires the shift in values and beliefs, the modification of cultural habits, not only in the families themselves, but in the systematic approach of the state and the entire society. The priority of state social policy should be the future healthy and well-educated young generation and the support for functional, economically self-sufficient and independent family. Effective solutions and their suitable accumulation (better working conditions, less onerous tax burdens, improved social services for families with children, education and transportation) would make it easier for the parents to meet their parental duties.

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# ANALYSIS OF THE IMPACT OF GLOBALISATION ON SELECTED INDICATORS OF FIRM'S ACTIVITIES

*Róbert Štefko, Prof., Dr., PhD*  
*Ladislav Sojka, Associate Prof., PhD*  
University of Presov in Presov, Slovakia

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## Abstract

The paper describes the characteristics of globalization, as a typical phenomenon of economic development. It describes the definitions of globalization as well as the positive and negative aspects of globalization. Given the many times contradictory assessment of the impact of globalization, a research was conducted on a sample of 69 Slovak companies which were affected by the globalization process in the last five years. The paper studies the impact of globalization on the performance, remuneration, relations between managers and employees, as well as to work – life balance. The study found a statistically significant positive impact on the performance and remuneration and a negative even though statistically insignificant impact on employee relationships. It was found a strong negative correlation between the degree of globalization and the work – life balance.

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**Keywords:** Globalization, Performance, Impact of globalization Human resource practices

## Introduction

Globalization as such is not a recent phenomenon. The term globalization however has been more commonly used since the 80's of last century, when technological advances, particularly in information technology, began to significantly accelerate and facilitate the implementation of international business transactions (Balaž, Verček 2002). Globalization is the process of denationalization of markets, political and legal systems, in other words, the rise of so called global economy. Globalisation describes the extension of business activities that have been carried out on its territory, beyond the nation's borders.

Globalization also significantly changed the market, on which companies compete with each other (Yip 1995). There are many positive but also negative aspects which accompany globalization. It brings with itself

many challenges which the company managers have to face. They need to be concerned with global issues while addressing the local issues as well. They must reflect the convergence trends, especially if they are associated with the transfer of best practices, but also must take into account cultural, institutional and other tendencies and traditions which operate divergently.

The aim of the paper is:

- Introduce a definition of the main characteristics of globalization,
- Explain why globalisation is viewed with controversy
- Outline the impact of globalization on human resource management practices
- Present the results of own research on the impact of globalization on selected indicators of activities of enterprises.

### **Globalization, definitions and characteristics**

It should be noted that there is no single universally accepted definition of globalization. The issue of coming up with a complete theory on globalization and its concise and comprehensive definition is whether individuals or teams dealing with the issue of globalization and its accompanying phenomena, focus on its positive or negative effects. Therefore, almost the single criterion on which the researchers can agree on is that it is a spontaneous, uncontrolled process involving still more intensive integration of countries of the world into a single global economic system. This concept should also include a number of other political, social, cultural, security and other relations directly related to globalization ( Rajnoha, Dobrovič, Slivková 2014).

Most of the other definitions of globalisation are based on the economic dimension of globalization. According to the definition adopted by the participants of the World Economic Forum in Davos (Switzerland) *"Globalization is the result of a digital revolution and represents an unstoppable process supported by the development of communication and information systems, global transport systems and barrier-free transfers of capital around the world and the creation of networks."*

The IMF defines globalization *"As a growing economic interdependence of countries worldwide due to the increasing volume of international capital and cross-border transactions of goods and services, as well as faster and broader dissemination of technology"*.

Other definitions take into account not only economic but also other elements of globalization. For example, Keller (2000) defines globalization as "a complex process of technical, economic, political, social and cultural changes that are reflected in particular in the last two decades of the 20th century." According to him, the reason for the creation of a new asymmetry of power, which is given various new mobility possibilities. The potential for

mobility acts as a resource that is able to carry negative externalities for all that remains spatially bound.

Norberg (2006) defines globalization as *"The process in which people, democracy, trade, market economy and investment increasingly cross borders between countries and thus borders become less and less restrictive to people."*

Eichler (2010) consider globalization *"A dynamic process that breaks down barriers, frontiers are blurring, linking different countries and continents, creating a completely new framework not only economic and political but also international security relations. The effects of globalization is continuously strengthened and there is a continuous growing influence of non-state actors and increasing role on the world stage play a large multinational industrial corporations, big state-owned enterprises and non-governmental organizations "*.

The author highlights one attention-grabbing definitions which describes globalization in a complex and precise way, by Šikula (2005) : *"Globalization is a multidimensional process which interrelates and affects the economic, political, sociological, technological, ecological, cultural, religious, military-strategic and other conditions and factors. The current development shows that within the multidimensionality of this process, the economic aspects significantly determine and influence other aspects of globalization. "*

According to the authors Gdovirajan and Gupta (2001), the concept of organizational globality can be assessed as a three-dimensional construct based on the fact that the organization can be more or less globalized according to three indicators, namely:

- presence in the global market,
- globalization of the supply chain,
- globalization of organizational thinking (approach).

Globalization increasingly dominates all areas of economic, political and social relations and fundamentally influences the development of national economies. The result of the operation is the creation of a global world economy(Kelly1998).

The global economy can be characterized as (Ivančik 2012, p. 30):

- Controlled economy and by guided megacompetition formed the by strongest transnationalist corporations
- economy built up around strong regional clusters.
- economy in which competitiveness determines the ability to transform information into knowledge and intelligence,
- economy in which innovations aimed at resource-consuming, labor productivity growth are replaced by innovations based on multipurpose use of human creativity,

- virtual economy to go beyond the limitations of time and space by creating virtual teams, corporations and agencies,
- economy without intermediaries, which will replace the modern communication networks
- Real-time economy, characterized by shortening production cycles and the shortening time in all spheres,
- atomised economy in which the owner and individuals have the opportunity to act and create new values, a network economy, in which mentioned the atoms come together
- an economy that has the character of a flexible network consisting of flexible, thin, fast and organic units strung together in a spider-web system
- economy whose core is based on knowledge and the value of work is increasingly based on knowledge.

### **Globalization and interdependency**

Interdependency is the process of deepening the dependence between economies, national markets, countries and regions that are increasingly affecting the development of the world economy. Activities within a country are in fact reflected in its position through existing links with external economic environment. In recent decades, the interdependence between the economies of the world economy steadily deepened. For decades, this dependency was determined by the differences arising between the allocation of raw materials, fuel and energy, technology and food, ie spatial, temporal and eternal differentiation between the production and consumption and a reference politico-economic and social superstructure, affecting all bilateral exchange flows between these centers. Only in the last decade, this asymmetric interdependence gradually gets to be of more harmonious proportions.

The consequence of the establishment of bilateral and multilateral relations between the countries is growing interdependency, ie deepening interdependence and interconnection of individual economies. The process of strengthening international interdependence is not yet currently closed because it will most likely come down to creating a homogeneous global market. Already now, however, it brings a new qualitative reality, and the complexity of this phenomenon can be understood on several levels.

When describing the process of international interdependence one cannot omit the increasing asymmetry, particularly in the relationship between developed and developing countries. Developing, or less developed countries are at a disadvantage in the international relations as they are much more dependent on developed countries than the other way around. The global financial and economic crisis like the current migration situation between underdeveloped and developed countries clearly demonstrates this.

## **Globalization and internationalization**

Because of rapid globalization, which leads to a significant internationalization, integration and concentration (Joklová, Ryšavá 2009), there has been a rise of economic entities called "*Multinational corporations*" (MNCs). Organization for International Cooperation and Development (OECD) in 1977 defined multinationals as "*Companies or entities whose ownership is private, public or mixed, which are based in different countries, interconnected by one or more of which may exert significant influence on the activities of the other, particularly with regard to the sharing of knowledge and resources*" (UNCTAD 2005, p. 11).

The indicator for the level of internationality in NMCs is the "so-called *transnationality index* (TNI), which is the average of the three shares – foreign assets to total assets, foreign projects to the total number of projects and the number of foreign employees to their total. Another indicator is the *internationalization index* (II), which is the ratio of the number of foreign subsidiaries to the total number of subsidiaries" (Štrach 2009, p. 34). These indicators were also used in the research shown below

The development of internationalization processes in the global economy is gradually becoming more and more the domain of purposeful macroeconomic policies of individual countries and transnational corporations (Ivančík 2012). But globalization also brings with itself a few significant changes. Perhaps the most significant change is the fact that while for decades internationalization was seen as a means to promote the interests of major economies to bigger and stronger companies, so in recent years there was a push for a connection of countries into various integration groupings, alliances, unions, and associations in which firms (company, corporation) use (or misuse) the states to promote their own business interests.

The internationalization of companies is an economic activity which goes beyond individual national economies and more notably resulting in the current transnational corporations. International activities of various kinds do not only develop large but also small and medium sized businesses that are within the reproductive process of large companies very closely. One of the effects of internationalization is the continuous growth of production for export, creating a foreign affiliate of branches, expansion of international capital movements and migration, etc (Briscoe et al 2012).

The internationalization process is often hindered by state intervention in the economy, preferring domestic business entities, the issue of imbalances of payments, differences in political, economic, social and cultural level between the countries and obstacles of a political nature. Optimal conditions of internationalization creates space in large markets

created by the linking of the integration of national economies in terms of common markets, monetary and economic union.

Internationalization takes place in an area of the world economy mainly as a result of international economic interdependence - dependence between its different parts and ultimately the national economy. The economic activity of one country connected to the outside world is reflected in the status and activities of other economies and is itself influenced by what happens beyond its borders. It is obvious that internationalization, interdependence and globalization processes are closely linked and mutually promote and strengthen each other. Globalization and international economic interdependence on the one hand a consequence, on the other hand, are a prerequisite for internationalization. The globalization process has necessarily expanded the radius monitored business premises, the access of companies to these procedures could be twofold.

If the company only monitors all impacts of globalization and partly adapt its behavior, they are only passive adaptation to globalization tendencies. The company has no choice but to use this approach if it is a small business entity with sufficient funds, qualified staff and language proficiency or necessary know-how to be able to use an active approach in the form of internationalization. The second approach assumes active involvement of firms in the globalization processes. The company does not view globalization as a threat to their business activities, but rather sees it as an opportunity for their growth and expansion. This approach is implemented through the internationalization of firms (Ivančík 2012).

Positive effects are obvious especially for small economies since the right business orientation and intensity of import for a small country, even if inadequately equipped with the necessary factors of production, essentially solve or at least reduce their own lack of natural or other sources. The whole process actively intervenes in the internal structure of the national economy. The experiences of developed economies show that the smaller economic dimension of the national economy is and the more it lacks developed (in particular natural) resources, the more acute is the need for deeper involvement in international economic structures (Guilen 2001).

Globalisation is therefore real whether we consider it a positive or negative. The resulting impact on companies depends on how the national economies concerned react to this process. Low level of development, especially if combined with weak management and mistakes in the protection of national and corporate interests, cause that the negatives outweigh the positives.

Globalization impacts are manifested on two levels; the macroeconomic and microeconomic level, ie the level of the business units. It is not easy to separate the positive and negative impacts of globalization.

However literature gives us enough background to the fact that such a separation could be done.

Some of the positives seen at the macro level include:

- Globalization releasing stored energy and making the use of global resources more effective leading to rising wealth for all peoples,
- It brings cost reduction due to cost savings from increasing the volume of production,
- Globalization allows better access to developed countries' mineral resources of the less developed countries,
- The emergence and expansion of new markets that are independent of mineral resources,
- Transfer of new technologies and knowledge from developed to less developed countries by transnational corporations and broadcast expatriates
- Reducing the effects of geographic distance for Foreign Economic Relations through information technology,
- Entry into a country in which the government uses nondemocratic methods and it brings about elements of democracy.

The negative aspects of globalization on the macro level mainly include:

- Management in the global business does not respect the moral principles of business.
- Agriculture in developing countries must compete with developed countries that have subsidized agriculture.
- Work, material and energy intensive manufacturing are moved to less developed countries, where costs are much lower, often at the cost of reduced quality of life in less developed countries and negative influences to their environment.
- Entry of criminal elements to economic events and linking of gray economy with political power, building a parallel economy.

The second level at which it is necessary to examine the effects of globalization is the level of business units. This level is also the subject of an investigation carried out on a selected group of business units in the Slovak Republic and the results of which are also subject of the present paper.

Effects of globalization on the level of business units, include in particular:

- Increasing diversity of the workforce, particularly in multinational enterprises and therefore a need for diversity management,
- Need for a new generation of managers equipped with language, knowledge of a multicultural knowledge with sufficient empathy for local employees,

One of the goals of globalisation and the resulting emergence of multinational companies should also have the effect of increasing the level of performance at the corporate and at individual level. An increase in performance should naturally be accompanied by the increase in the level of remuneration. The question is whether the effects of globalization have a positive impact on the employment relationship and the level of balance between work and personal life. Literature gives inconsistent results in this respect. The aim of the research conducted in the Slovak economic environment and presented in the present paper is to give the view on impact of globalization on performance of the business units but also on other indicators of entrepreneurial activity, such as remuneration, interpersonal relationships and the balance of work and personal life.

### **The aim of the research**

The literary analysis showed that globalization affects all aspects of economic life on the macroeconomic level and at the level of business units. This influence can be negative and positive. The above analysis showed the demand to find out what impact globalization has on performance as a leading indicator of corporate actions, for remuneration, which is the main domain of interest of employees, the employee relationship management and for work-life balance. The goal was to find a link between the level of globalization and the selected indicators of corporate activities, namely:

- Organizational performance
- Levels of remuneration,
- Relations between employees and senior management of the company,
- Level of balance between work and personal life.

**Sample.** A total of 140 organizations interviewed were affected by the globalization process in last five years from 2010 to 2014. The selected organizations had to meet the following requirements in terms of affecting the process of globalization:

- presence in the global market,
- internationalization of business activities,
- organizational transnationality (be part of multinational corporations)
- perceived level of globalization of thinking.

The research interviewed the heads of human resources management departments, who represented the attitude of the entire organization towards the problems analyzed. The questioning of individual organizations was done via e-mail for 110 organizations and 30 through a personal interview. Overall, we have obtained 69 usable responses.

**The composition of the research sample by sector focus was as follows:**

Engineering metallurgical industry: 20 organizations.

Food industry: 14 organizations,

Civil engineering: 17 organizations

Chemicals: 6 organizations

Textiles and clothing: 12 organizations

**Variables and scaling**

The degree of globalization was set as an independent variable. The study used a five point scale with following extremes:

1- very low degree of globalization

5- very high degree of globalization.

The degree of globalization was estimated as a degree perceived by head of human resource department

**Dependent variables- selected indicators of enterprise activity.**

Dependent variables were:

1. *Organizational performance.* When assessing the impact of globalization on organizational performance was compared to the level of performance achieved in 2010 and the end of 2014. Scaling was:

1- much lower in 2014 than in 2010

2- lower in 2014 than in 2010

3- same

4- came out in 2014 than in 2010

5- much higher in 2014 than in 2010

2. *WLB(Work Life Balance).* The evaluation compared the perceived quality of work and private life balance in 2014 and 2010. A five point scale was used again, where each grade implies:

1. WLB perceived much lower in 2014 than in 2010

2. Lower perceived WLB in 2014 than in 2010

3. The same WLB at the end of 2014 than in 2010

4. WLB higher in 2014 than in 2010

5. WLB much higher at the end of 2014 than in 2010,

3. *The level of remuneration in the perception and comparison of 2010 /2014.*

1- much lower

2- lower

3- same

4- higher

5- much higher

*4. Interpersonal relationships based on a comparison of 2014 and 2010.*

- 1- much worse
- 2- worse
- 3- same
- 4- better
- 5- much better.

Data collection was conducted in the period January 2015 to April 2015. The answers are individual perceive of respondents-head of human resource department.

**Hypotheses**

Based on the literary data and analysis (Sojka 2015) on the impact of globalization on selected management practices were determined following hypotheses:

H1. There is a statistically significant positive correlation between the degree of impact of globalization and performance improvement rate.

H2. There is a statistically significant positive correlation between the degree of the impact of globalization and the rate of increase of remuneration levels

H3. There is a positive, statistically significant association between the degree of impact of globalization and a slightly positive effect on interpersonal relationships.

H4. There is a statistically significant positive correlation between the degree of the impact of globalization and on a slightly positive effect on levels of work- life balance.

**The results of the research**

The Spearman's rank correlation coefficient and value **p** was calculated according to the data and a correlation matrix was processed. Results are provided in the table below.

Table. The calculated values of correlation coefficients and p values

			The degree of the impact of globalization	The degree of impact on performance	The degree of impact on remuneration	The degree of impact on interpersonal relationships	The degree of impact on WLB
Spearman's rho	The degree of the impact of globalization	Corr. Coeff	1000	<b>.723**</b>	<b>.433**</b>	<b>-.256**</b>	<b>-.677**</b>
		p	.	<b>.000</b>	<b>.000</b>	<b>.003</b>	<b>.000</b>
		N	69	69	69	69	69
	The degree of impact on performance	Corr. Coeff	<b>.723**</b>	1000	<b>.439**</b>	<b>-.347**</b>	<b>-.601**</b>
		p	<b>.000</b>	.	<b>.000</b>	<b>.004</b>	<b>.000</b>
		N	69	69	69	69	69
	The degree of impact on remuneration	Corr. Coeff	<b>.433**</b>	<b>.439**</b>	1000	<b>-.201</b>	<b>-.362**</b>
		p	<b>.000</b>	<b>.000</b>	.	<b>.097</b>	<b>.002</b>
		N	69	69	69	69	69
	The degree of impact on interpersonal relationships	Corr. Coeff	<b>-.356**</b>	<b>-.347**</b>	<b>-.201</b>	1000	<b>.588**</b>
		p	<b>.003</b>	<b>.004</b>	<b>.097</b>	.	<b>.000</b>
		N	69	69	69	69	69
	The degree of impact on WLB	Corr. Coeff	<b>-.677**</b>	<b>-.601**</b>	<b>-.362**</b>	<b>.588**</b>	1000
		p	<b>.000</b>	<b>.000</b>	<b>.002</b>	<b>.000</b>	.
		N	69	69	69	69	69

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

Based on the results shown in the Table, we can draw the following conclusions:

The hypothesis H1 hypothesis was confirmed, it means that there is a positive and statistically significant link between the degree of perceived globalisation and performance. Spearman Correlation coefficient  $r=0,723$ . Spearman correlation is significant at the 0.01 level (2-tailed)

The hypothesis H2 was also confirmed, it means that there is a positive and statistically significant link between the degree of perceived globalisation and remuneration. Spearman correlation coefficient  $r=0,433$ . Correlation is significant at the 0.01 level (2-tailed)

The hypothesis H3 was not confirmed. Hypothesis presupposed a positive link. Research results showed weak negative though statistically significant correlation between the perceived degree of globalization and

employee relations. Spearman correlation coefficient  $r=0,256$ . Correlation is significant at the 0.01 level (2-tailed)

Hypothesis H4 was not confirmed. Pressupposed a positive correlation between the degree of the impact of globalization and a rate of increase balance work - life balance. The research results showed a strong negative and statistically significant relationship. The value of the Spearman correlation coefficient was surprisingly high, in this case  $r=0,677$ . Correlation is significant at the 0.01 level (2-tailed)

### **Discussion of the results**

As is apparent from the research results presented, the first two hypotheses were confirmed. Organizations which have been heavily affected by the impact of globalization, whether of the aspects of globalization supply chain or the degree of internationalization aspect or aspect of the presence in the global market, significantly increased their performance. This fact is confirmed by the data of the Statistical Office of Slovakia. Performance has been increased thanks to the transfer of management practices, transfer of technology from the parent company to subsidiaries located in Slovakia. Logically, it follows that the level of remuneration was increased as a result of higher performance at the organizational level, but also at the individual level, thus working efficiency.

An association between the impact of globalization and the level of relations between managers and employees has surprisingly been shown to be negative. A more detailed analysis of organizations which manifested such a negative association found that this in particular concerns organization where the top management is composed of expatriates. The expatriates do not always have enough empathy towards local employees and sometimes insensitively implement practices from home country to subsidiaries. In certain cases envy resulting from the pay gap plays a role.

A relatively strong negative correlation was found between the degree of the impact of globalization and the level of balance between work and personal life. Apparently it is a tax which employees must pay for increased performance, but also at a higher salary. This fact is indirectly confirmed by other statistical surveys, increased workload leads to higher divorce rates, fewer new marriages and various psychosomatic disorders.

### **Conclusion**

Globalization has its positive and negative effects on the macro-economic level and on the level of the individual companies. Undoubtedly, it contributes to increased efficiency, better financial remuneration of middle and lower management, as well as ordinary employees. Among the negative aspects of the globalization process, however, we should mention the

deterioration of employee and relations between senior management and lower and middle management. In this case the situation can be solved by better preparation of expatriates and their appropriate selection. Impaired balance work and personal life can be gradually balanced by an implementation programs aimed at quality and work – life balance. Such programs should be developed by the management of organizations and representatives of employees. An example of such a program of action would be limiting the number of work travel in a month, particularly overseas, limiting phone use after working hours and so on.

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# **POWER OVER CHANGE: HIGH SCHOOL SCIENCE INQUIRY IN INDIA**

*David Cline*

Saginaw Valley State University, University Center Michigan,  
United States of America

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## **Abstract**

The researcher was asked by the Chairman of a private school for girls in India to assist the science teachers at the school in moving classroom instruction towards a more inquiry based teaching method. The prevailing methodology at the school was that of direct instruction. The researcher, along with three undergraduate teacher candidates, conducted a series of demonstration lessons for students to engage in and for teachers to observe. After the lessons teachers from the Indian school were asked for feedback and questions. The study is framed around three concepts: risk, trust, and power. The Indian teachers are risking much in a transition to inquiry based teaching since they are bound to test scores as an indicator of effectiveness in their jobs. The researcher is a well-known figure in the Indian school that the teachers trust. The chairman of the school has the most power in this arrangement since he controls hiring and firing of teachers based on effectiveness measured by standardized tests. The key findings of this study suggest the teachers are willing to move from the direct teaching format in science instruction to an inquiry model, but are fearful of a drop in standardized test scores during the implementation period. Therefore, they would rather keep the direct instruction method that has been shown to generate high standardized test scores thus keeping their jobs. The Chairman wants an immediate move to inquiry teaching on one hand, but without a fluctuation of scores.

In the fall of 2004 this researcher was asked by our Dean of the College of Education to visit India as a favor to a retired faculty member who is active in school policy and practice in the state of Karnataka, India. The faculty member was born in India, but did his doctoral work in the United States. His university teaching experience was all in the United States as well. He retired to India in early 2000. The purpose of the visit was to visit teacher training colleges, to speak when necessary, visit with political officials, and to generally be part of a good will trip. I obliged and my life changed. The culture and the people of India entered my heart.

Fast forwarding to the late 2000's the retired faculty member became Chairman of a school that his father had started in 1967. This school is in rural Karnataka state, India. I received a call and was once again summoned to India.

At first, the visit seemed political in nature, but as I talked with the Chairman it became clear that he wanted my expertise as a science educator and curriculum theorist. The issue at hand was to modernize science teaching at the school to become more inquiry based and move away from the expository model currently in use. I accepted the challenge and have visited the school five times in the past six years.

### **The typical class period**

The school is situated in rural Karnataka state atop a forested hill on the Deccan Plateau. Girls from affluent families from the surrounding area mix with poorer girls from the villages and farms to make up the 850 member student body. All live and study on campus in residential quarters. Day begins with physical training and breakfast before assembly. The classes for the day begin at 8:30am and the girls attend three fifty minute periods before a morning break. Three more classes take them up to 2:30 and lunch. After lunch is a rest period, afternoon sports, and study time before dinner at 8:30 and more study before lights out.

The model of teaching at the school is expository. The students keep the same classroom and teachers come to the students. The students rise when the teacher enters the class and is greeted with, "Good morning Miss," or "Good afternoon Sir," depending. The students sit two at a desk in rows facing forward to a raised platform for the teacher's desk. There are large ceiling fans and open windows with grates. The grating keeps monkeys and other indigenous creatures from entering the school building. Depending on the location of the classroom in the building there are either chalkboards or whiteboards. A few of the rooms have presentation technology, but I have never observed it in use. Teachers have commented that they are comfortable with the technology, but do not plan to use it much due to the unreliable nature of electricity in rural Karnataka.

The typical class period begins with a short review of the previous day's lesson. The teacher will read a paragraph from the text, reread the text as it is written on the board, ask questions requiring the students to respond with a word from the sentence just written, and then the students copy the notes from the board. Questions? Next paragraph. The teacher is in control of the classroom with little input from the students. This procedure continues for a fifty minute class period.

The researcher employed participant observation and interviewing as the major tools of inquiry. The researcher has observed, taught, and

socialized with the students and faculty of the school during the month of June for the past six years. It was a move that none of the participants regarded as strange when the researcher conducted demonstration lessons and follow up interviews with the science teachers.

Data was collected by field notes, interviews, video, and audio recordings. Interviews with the Chairman of the school, teachers, undergraduate assistants, were conducted. Vignettes were written based conversations held with the Indian students.

The analysis of the data was conducted by the re-reading and expansion of field notes and interview data looking for emergent themes in regard to the framework of trust, power, and risk. From this data reduction a matrix was created outlining the relationships of the three key players (faculty, researcher, chairman) in relationship to the three key themes. This matrix was shared with the teachers and chairman for additional feedback.

**What the Chairman wants**

There is an old saying, “The world’s easiest job is knowing how to raise someone else’s kids.” Certainly I never wanted to appear as an expert dictating to the teachers at this fine school what to do. The Chairman wanted me to assume that role.

The chairman of the school was taken by a visit to this author’s elementary science methods class while visiting the United States. He familiarized himself with the National Science Education Standards (1996) and later the Next Generation Science Standards. (2013) He made it clear that his intention was to have world class science teachers at his school and he wanted to teach toward inquiry. This researcher was asked to come to India and work with his science teachers.

Martin (2012) describes the inquiry process as a continuum moving from pure expository teaching through guided inquiry to student directed inquiry. The movement along the continuum also changes the role of teacher from dispenser of facts to co-investigator to observer.

Figure 1

	Inquiry Continuum		
Expository Teaching	Guided Inquiry		Free Discovery
←-----	----- -----		-----→
More teacher directed			More student directed

Figure 2 shows the differences between the methodology currently in place and the direction the Chairman wants to move toward.

Figure 2

	<b>Currently in Place</b>	<b>Moving toward</b>
<b>Principal Learning Theory</b>	Behaviorism	Constructivism
<b>Student Participation</b>	Passive / Regurgitative	Active
<b>Student Involvement in Outcomes</b>	Decreased Responsibility	Increased Responsibility
<b>Student Role</b>	Direction Follower / Listener	Problem Solver
<b>Curriculum Goals</b>	Product Oriented	Process Oriented
<b>Teacher's Role</b>	Director / Transmitter	Guide / Facilitator

This chart is very similar to discussions in the National Science Education Standards (1996) of the changing emphasis of science education in the US. The typical lesson in the Indian school is direct instruction based on a behaviorist model of the teacher providing a stimulus and the students responding. There is also an element of essentialism in the classes since the state syllabus outlines a substantial body of knowledge to be mastered.

The teachers are comfortable with the current model of instruction. Their teacher training has taught them to read the text, write notes on the board, ask students to repeat, and then ask students to copy the notes before moving on to the next paragraph in the text. (I learned this method first-hand by being asked to substitute teach in a biology class in which I had had no time to prepare a lesson. The students in the class, familiar with the method, directed me through how teaching was done in their school.) Repetition causes reinforcement of the concept.

### **Trip One, June 2010 – 21 Days**

The first trip to India was a failure. The researcher planned to undertake class visits, conduct observations of teachers, and present an inquiry workshop, but his time was taken to visit politicians, school officials, and high ranking members of the community. The inquiry workshop was reduced to a mandatory meeting for thirty minutes in the school auditorium. The workshop turned into a lecture with no hands on experience. When it was over the male teachers shook my hand and the women teachers smiled politely and told me how wonderful the lecture was.

The few classes I got to observe had lecture and choral response as the primary method of delivery.

I expressed my displeasure on the political nature of the trip, but the Chairman informed me that education in India has a healthy dose of glad-handing politicians in order to keep funding coming toward the school. It was also revealed that the Chairman expected me to dictate to the teachers how inquiry was to be done and they should do as they are told.

I don't work that way.

### **Trip Two, 2011 – 20 days**

The next trip to the school suggested the teachers are willing to change. As I observed classes there were some attempts to involve the students in discussions, but any demonstration was performed by the teacher with the students as observers. A few teachers sought me out to disclose their willingness to move from the direct teaching format in science instruction to an inquiry model, but are fearful of a drop in standardized test scores during the implementation period. Therefore, they would rather keep the direct instruction method that has been shown to generate high standardized test scores thus keeping their jobs. The Chairman wants an immediate move to inquiry teaching on one hand, but without a fluctuation of scores.

The study is framed around three concepts: risk, trust, and power. The Indian teachers are risking much in a transition to inquiry based teaching since they are bound to test scores as an indicator of effectiveness in their jobs. The researcher is a well-known figure in the Indian school that the teachers trust. The chairman of the school has the most power in this arrangement since he controls hiring and firing of teachers based on effectiveness measured by standardized tests.

Hubbard (2001) identifies three essential factors - risk, trust, and power - that helped her develop and change curriculum and methods in her classroom. To begin the process of change demands the teacher to take a risk with expected outcomes, but in order to engage students and make topics more relevant, the teacher must trust the students to choose significant and meaningful topics. This requires the teacher to relinquish some power as all-knowing director and subsume a co-learner position. These factors are important guiding principles for initiating immediate change in the classroom. However, in order for the change to be significant and lasting other factors have to be considered.

Using Hubbard's work to delineate the power dynamic at the school, charting the trust, based on interviews and conversations, the Chairman trusts the researcher, but has little trust in the teachers' abilities to change. The researcher trusts the Chairman and the teachers. The teachers trust the researcher, but have less trust in the Chairman since he controls the future of their employment at the school.

Figure 3

<b>Trust</b>	<b>Chairman</b>	<b>Researcher</b>	<b>Teachers</b>
<b>Chairman's Acceptance</b>	x	Trust	Less trust
<b>Researcher's Acceptance</b>	Trust	x	Trust
<b>Teacher's Acceptance</b>	Less Trust	Trust	x

Charting the risk involved in moving toward inquiry based science teaching the Chairman is clearly in control. While he has some risk involved with falling standardized test scores he can replace teachers at will. The researcher's risk is that of credibility with the Chairman and the Teachers, but the Chairman views any failings in moving toward inquiry on the teachers and not the researcher. The teachers are risking the most. They are caught in a "damned if they do, damned if they don't" situation. If they refuse to move toward inquiry methods in their science classes they can be dismissed. If, however, they embrace inquiry methodologies but their standardized test scores slip they can be dismissed as well.

Figure 4

<b>Risk</b>	<b>Chairman</b>	<b>Researcher</b>	<b>Teachers</b>
<b>Chairman's Risk</b>	x	Small	No risk, the chairman can replace teachers
<b>Researcher's Risk</b>	Small risk	x	Small risk of credibility
<b>Teacher's Risk</b>	Huge risk, could lose employment	No risk	x

It should be noted that the Chairman, although he answers to a board of directors, is seldom challenged in his decisions. His father started the school and was a revered figure in education in Karnataka state, and he is continuing the legacy of his father at the school. The researcher, while viewed as a friend of the school and respected by the teachers and staff has little power over the teachers. The teachers are ultimately powerless in the school. There is no recourse in curricular decisions.

Figure 5

<b>Power</b>	<b>Chairman</b>	<b>Researcher</b>	<b>Teachers</b>
<b>Chairman's Power</b>	x	Some power over the Researcher	Ultimate power over the teachers
<b>Researcher's Power</b>	Little Power over the Chairman	x	No power over the teachers
<b>Teacher's Power</b>	No power over the Chairman	Some Power over the researcher	x

### **Trip Three, 2015**

On trip three I had become exasperated with the process. The teachers described themselves as doing inquiry, but classroom observations suggested otherwise.

“Sir, are students are actively engaged. We lecture and provide a demonstration for them to watch. They are also involved in reading the text and taking notes.”

I had heard this explanation before from student teachers in the United States. As I observed their lesson I noticed the focus of attention was the teacher and the students were passive recipients. But, from the teacher’s point of view the students were actively engaged. This point of view is also echoed by some of my university colleagues who have said, “Students can construct knowledge by sitting and listening.” Perhaps, but I think this only serves to muddy the water when talking about the active nature of constructivist teaching.

### **Resistance and Analysis**

The resistance to change is natural. From the point of view of the teachers this change is fraught with danger. They were taught to teach using a series of techniques that they understand quite well and use to keep the school’s standardized test scores quite high. Students at this school are often highly ranked in the state of Karnataka as well as the whole of India. The teachers do not understand why they are being asked to deviate from a plan that is working.

Whether the activity is expository (low engagement), guided inquiry (teacher directed), or free discovery (student directed), there are ways to help lessen students' apprehension about inquiry activities and strengthen science process skills, as well as helping them learn specific science concepts.

When implementing inquiry in science, keep the following in mind:

1. Pose open-ended questions
2. There will be a great temptation to tell students what to do. Avoid this
3. Practice wait time. Give students time to think after asking questions.
4. Encourage free thinking and exploration
5. Encourage students to describe observations in their own words.
6. Discourage “scientific sounding talk” that may be parroting.
7. Allow students to work together.
8. Let students talk to one another during the activity.
9. Think about how to assess the inquiry.
10. Inquiry can be frustrating to students who always need “the right answer.”

There is a common misconception that curricular changes can happen by decree. If the government, whether in the US or India, decides a change should be put in place schools are generally given a year or two, little or no funding, and minimal support for implementation. I have seen this in my career as an educator many times. The most radical example being schools in the US who wrote grants for computers, received money, spent the money on hardware to have a high computer to student ratio, but had no money left for software. Consequently, save for freeware, these computers gathered dust.

The rub comes for Indian schools since the State Syllabus for Science now is calling for inquiry activities to be included in all science classes. In this way the Chairman is ahead of the mandate. His teachers, though few have implemented, have been aware of inquiry infusion for a few years now. It will be interesting to follow this development and see if what happens to science scores statewide.

### **Assertions**

**The chairman wants immediate change with little professional development and no change (or improvement) in standardized test scores in science.**

This is evidenced throughout our interactions with the Indian school. Changes should happen immediately because the teachers are told to do so. Professional development for the Indian teachers (so far) amounts to a half hour lecture and a handful of demonstration lessons. It is understandable that teachers are feeling pressure to change, conform, and perform.

**The teachers are reluctant to change because they are fearful of a drop in scores.**

This information comes from the culture of the Indian school. Teachers are evaluated strictly on the standardized test scores their students receive. The other factor working in favor of the teachers is that girls in the school who fail to perform well on standardized tests are given probation and eventual expulsion if their scores do not improve.

**The students at the school, beginning with their first science class, need to be instructed in doing science by way of inquiry.**

The school, with its expository teaching methods, has a culture of science being “a basket of facts” to be memorized and spewed back on standardized tests. Once again, change must begin early in their schooling. It has been suggested to the Chairman that inquiry science be implemented first with the Sixth Standard girls and phase the process in over the six years it takes a girl to matriculate through the school. This was greeted as a good

idea, but in the meantime (2013) the State Syllabus for Karnataka has called for the immediate implementation of inquiry methods. Perhaps this will be the saving grace of the teachers at the school since all teachers in Karnataka face the same challenge of implementation and questionable test scores.

Students (and teachers) will need to be taught to think divergently and not always focus on a single correct answer. This attitude is deeply ingrained throughout India and will take years to overcome.

### **Moving forward**

It has been my experience that India produces world class doctors, scientists, and engineers from a population of over one billion people. That fact cannot be disputed. We could speculate and philosophize what the future will hold for future generations of science students in India, but for now, many of us working there will continue delivering professional development in inquiry methods in science teaching to teachers and working to change a system that, frankly, may not need fixing. Some of the Indian teachers have an attitude that inquiry teaching is good for the younger elementary children, but high school students need more expository preparation for college and career. I think for the short run a mixture of methods and a slow integration of inquiry methods will be best for India.

The same could be said for American schools. In my observations I tend to see more expository teaching in high schools and more inquiry in elementary schools. Middle school seems to be transitional with a mix of attitudes from teachers.

For now, we keep working.

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**Notice of Retraction:** Due to an authorship dispute, under a mutual agreement this paper has been retracted.

## **IMPACT OF FATHER'S EMIGRATION ON THE EDUCATIONAL TRENDS OF CHILDREN LEFT BEHIND**

A COMPARATIVE ANALYSIS OF STUDENTS, WHO ARE THE  
CHILDREN OF EMIGRANT AND LOCAL RESIDENT FATHERS

***Yasir Saeed***

PhD student at Department of Sociology,  
Memorial University of Newfoundland, Canada

***Hassan Raza***

PhD student at Department of Sociology,  
International Islamic University, Islamabad, Pakistan



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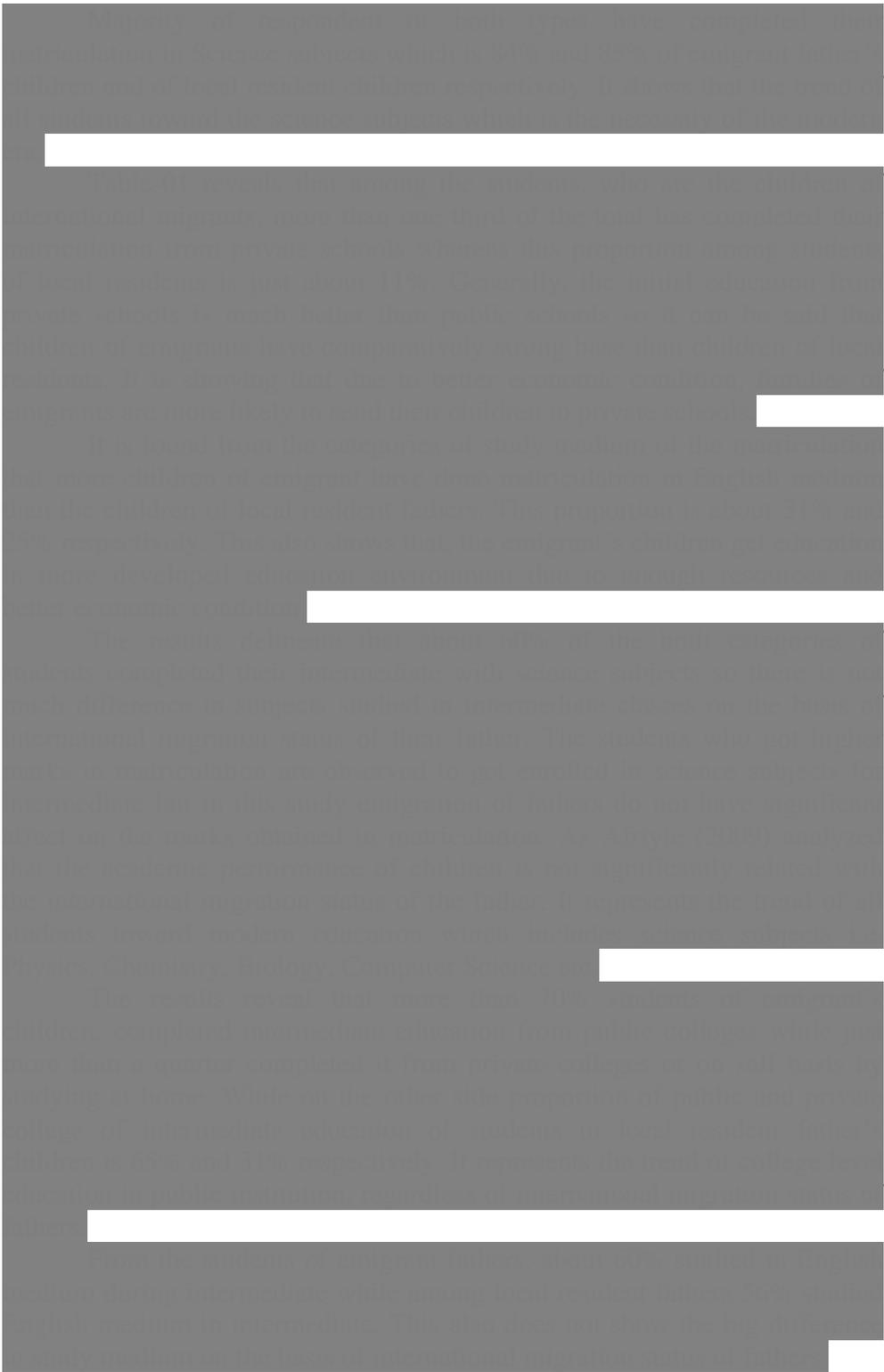
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# INTERPRETER TRAINING: LANGUAGE, CULTURE OR MORE? COURSE DESIGN: THE EXPERIENCE OF THE UNIVERSITY OF CENTRAL LANCASHIRE, PRESTON, UK

*Summer Mouallem*

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## **Abstract**

How important is it to include formal training on ethics and cross cultural issues within interpreting and translation training courses? The role of interpreters has been debated for many years by scholars where some see their role as mere people who transfer the spoken message from the source to the target language, with no omissions or additions. While others see the role of interpreters extending beyond the mere transfer of words and messages; they see messages as utterances loaded with spoken and unspoken cultural essences that need to be transferred too. By looking at some training courses available in the UK, it became clear that there is a need to teach the students a little more than just the required techniques and skills in interpreting and coping with interpreting difficulties. Shortfalls seen in courses were studied closely and were included in the design of the course. Taboo varies from one culture to another; what is seen as right (ethical) in one society may be seen as wrong (unethical) in another. How we deal with ethical or unethical issues depends on our own built in or acquired ethics and this may be reflected in our professional lives too. However, in our capacity as professionals, we must be seen as unbiased and we must not allow our own prejudices colour our work; this is not easy when we consider this has been growing within us since birth practically and hence re-training ourselves to become impartial in issues that are cultural must be an essential part of training. Acting ethically does not mean doing what the society describes as right: the law can incorporate ethical standards to which people subscribe but these laws can deviate from what is normatively ethical. Ethics are categorised as Deontological ethics or duty-based ethics (non- consequential)]; this means:

- Do the right thing
- Do it because it is the right thing to do
- Avoid them because they are wrong.

And then we have consequential ethics ("The ends justify the means", this means:

- What sort of consequences count as good consequences?
- Who is the primary beneficiary of moral action?
- How are the consequences judged and who judges them ?

This paper intends to show the steps taken in the design of the content of the interpreting and translation modules and the different angles used to ensure optimum preparation of future interpreters and translators. It will aim to show the problems and dilemmas faced when designing matters such as cultural and ethical matters where no two people can always agree but where it is essential we try and agree; it will show how no global consensus has been reached regarding what is right or wrong but yet it is necessary that we find common ground in order to move forward. The consequences of not doing so can be dire and this issue should not be ignored within our teaching institutions or by our practising colleagues.

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**Keywords:** Interpreting. Translation. Course design. Culture. Ethics. Teaching. Training

## **Introduction**

This paper intends to show the steps taken in the design of the content of the interpreting and translation modules and the different angles used to ensure optimum preparation of future interpreters and translators. It will aim to show the problems and dilemmas faced when incorporating matters such as cultural and ethical matters where no two people can always agree but where it is essential we try and agree; it will show how no global consensus has been reached regarding what is right or wrong but yet it is necessary that we find common ground in order to move forward. The consequences of not doing so can be dire and this issue should not be ignored within our teaching institutions or by our practising colleagues.

The author of this paper has taught on the MA interpreting and translation since the conception of the course and has used her former learning experience at another university to fill the gaps she thought students always had in their learning experiences. Most interpreting courses focus on the theoretical aspects of the profession (interpreting or translation theory) but many times this does not prepare students for the real world experiences as they do not always match the realities professionals face on a daily basis. Many students stumble during their first few years of employment (especially those who are self-employed as opposed to in-house employees) till they find out the best ways to improve their performances while keeping the costs down and managing to expand their client base. Niska (2005) discusses how within the UK itself, those universities that do offer interpreter

training, they themselves differ in their organisation and focus and this variance is large that it makes it hard to 'schematise' the British system of interpreter training. Niska also discusses a trend where training is focused on the labour market and where emphasis is on the training of interpreting skills only. Hatim (2001) also divides students of translation (and by extension: interpreting students) into two groups; the first group is those students whose training focuses on the relevance of theoretical issues and who need abstract models, while the second group is purely vocational where they practise but hardly take any theory whatsoever. Hatim uses those two groups and suggests we use comparative data between them as a single group and between experts in the field (practitioners in interpreting) to see how we can teach students problem solving in interpreting. This, in Hatim's opinion (ibid) will raise awareness to entire sample population which will make them all identify and recognise problems in interpreting and accept that those problems are real and hence they can analyse the problems and overcome them. This constitutes a major part in interpreter training.

The aim of the course at the University of Central Lancashire (UCLan) was to combine both aspects mentioned above, that is to make it academic enough to allow it to be of a Master's level acceptable within the UK Higher Education institutions but at the same time, it had to be practical enough to allow the students to walk into their first job without feeling the need for further training. In other words, the course was designed to be theoretically fulfilling yet at the same time it was built to be 'function-orientated'.

This paper will present the rationale behind the choice of the modules taught on the course; it will then attempt to explain how new modules were introduced to the course after a number of years in order to meet applicants' demands and the demands of the global markets.

### **Training competencies**

Let us look at the training competencies for the types of interpreting we are discussing. Training to be discussed here includes memory training, training in linguistic, cultural and ethical considerations plus coping techniques such as paraphrasing, note taking, the use of synonyms and the increase of general knowledge of the interpreters. Both types of training are constrained, but only to a little extent, by the exams set by the governing bodies, so for example, Public Service Interpreting (PSI) training has a larger emphasis on sight translation as this constitutes a major part of the PSI exam. In contrast, it has a minor part of Business interpreting (BI) training as it does not form part of the exams, but due to the possible need of a business interpreter to interpret some documents from time to time, this method is practised twice in the full academic year (once per each semester).

Schäffner and Adab (2000) discuss developing competencies in translation (and again, by extension interpreting) where they talk about the designers of the course needing to know how and when this competence can be developed and at what stages. They agree that those competencies are best developed at academic institutions that would eventually to a professional qualification. This corresponds with the plan at UCLan to make the course both vocational and academic at the same time to ensure the best qualified interpreters carry our qualification. This is further emphasised by Hatim (2001) who puts forward that the ‘action versus reflection dichotomy’ is no longer alien in the field of interpreting which has helped build research in this field and in the training of interpreting skills field. This again is seen to ensure that problems are identified and appropriate solutions proposed and duly adopted and explained (ibid). The problems mentioned twice above refer to the problems faced by interpreters, and therefore students of interpreting, while practising their profession. Once we recognise these problems and add them to our training courses, then the problems can be analysed within the classes and then the students can go out and practise confident in their ability to identify problems and solve them on the spot (in as much as possible in such situations where the decision needs to be instant).

### **Rationale for inclusion of modules and skills**

Ethics: By looking at some training courses available in the UK, it became clear that there is a need to teach the students a little more than just the required techniques and skills in interpreting and coping with interpreting difficulties. Shortfalls seen in courses were studied closely and were included in the design of the course. For example, taboo varies from one culture to another; what is seen as right (ethical) in one society may be seen as wrong (unethical) in another. How we deal with ethical or unethical issues depends on our own built in or acquired ethics and this may be reflected in our professional lives too. However, in our capacity as professionals, we must be seen as unbiased and we must not allow our own prejudices colour our work; this is not easy when we consider this has been growing within us since birth practically and hence re-training ourselves to become impartial in issues that are cultural must be an essential part of training.

The next question was: How important was it to include formal training on ethics within our interpreting and translation training course?

The difficulty with ethics is that it is a term that is hard to define; yes, we can use a dictionary definition, such as what is seen in the Oxford Advanced Learner’s Dictionary (2000: 427): ‘Ethics are moral principles that control or influence a person’s behaviour’. For the code of Ethics, the same dictionary gives the following definition: ‘a system of moral principles or

rules of behaviour' (Ibid). The Business Dictionary by Web Finance defines ethics as 'A branch of philosophy dealing with values relating to human conduct with respect to the rightness and wrongness of certain actions and to the goodness and badness of the motives and ends of such actions'. From the same site we also see it means choices are made on the basis of what looks right or reasonable, so the alternatives that must be evaluated must be either right (ethical) or wrong (unethical); but the problem lies in the fact that there is not a single consistent set of standards that decide what is right and what is not; these standards vary within communities and across communities.

According to Munyangayo (2012), ethics are categorised as Deontological ethics or duty-based ethics (non- consequential); this means:

- Do the right thing
- Do it because it is the right thing to do
- Avoid them because they are wrong.

And then we have consequential ethics "The ends justify the means", this means:

- What sort of consequences count as good consequences?
- Who is the primary beneficiary of moral action?
- How are the consequences judged and who judges them ?

In reality, many interpreters, especially those new to the field do not look at any Code of Ethics unless they are obliged to, or there are others who look at it at all times but stick to its contents word for word as they are too inexperienced to be confident enough to make their own interpretation of the articles and what pragmatic interpretation is seen behind them.

Culture: Language and culture cannot be separated and it is a fallacy to separate them when training interpreters; there has been much debate about the role of interpreters as inter-cultural mediators, and in order for an interpreter to be 'faithful, accurate and an effective communicator', an interpreter needs to keep, rather than discard, the cultural and non-verbal gestures and interpret them to his audience. Fishman (2001) states that language carries extensive cultural content within it; interpreters communicate between languages, hence they must surely be communicating the culture that is linked to those languages. After all, language evolves with time and in this language is embedded history of the people that speak that language today. Al-Shaer (2012: 289) puts this beautifully when he says: '[...] history is lodged in the living words and discourses of the present'.

Seleskovitch (1978) has what could be seen as the first account of the interpreter's role as a cultural mediator since the 1950s. She sees interpreters are there to explain cultural differences rather than pretend that those differences do not exist. The extent of the interpreter's intervention varies according to many factors amongst which would be the interlocutors'

knowledge of each other, their education background and more significantly, the distance between their languages and cultures. Larson (1998) states that translators, and by extension: interpreters, have to consider not only the two spoken languages but also the two cultures associated with those languages, since, in his opinion, there will be concepts in the source language which do not have lexical equivalents in the target language. This is due to many differences including cultural differences. Many other theorists see that translators and interpreters have two barriers to overcome: the first being the linguistic barrier and the other a cultural barrier. Ignoring one aspect and separating it from the other can be a risky business and can lead to negative consequences as mentioned earlier.

According to Al-Omari (2009) communication differs also depending on the type of culture the person belongs to; Arabs for example belong to a high context culture where their systems of communication are very complex that they rely heavily on body language, intonations, idioms and hidden meanings of words. Low context cultures (Scandinavians for example) on the other hand are more direct in their speech and they tend to say what they mean (with words).

Cultural differences have been divided by Jones (2002) into two types: the first being the Explicit Differences where the speaker refers to things and systems that exist in one culture but not the other (examples include culture specific catchphrases, academic institutions); here the interpreter needs to explain those missing concepts to fill the gap. Implicit Differences include irony, the speaker's hyperbole, and understatement and so on. These implicit gaps are more difficult to convey to the listener as the interpreter in these instances will be 'betraying' the speaker's intentions. An example of this would be when the speaker would say 'maybe': for most Arabs this is mostly an indication of a refusal, while for Westerners, it means they will be thinking about the matter in hand. This is vital to know and convey if a person is interpreting at business meetings, for example. The same for the word 'problem' which for the Japanese could be extremely negative and might impede communication or negotiations in a deal; an interpreter would be better off replacing this word with 'difficulty or challenge' which is received by the Japanese in a slightly more acceptable way. In such instances, as we can see, it is seen as the interpreter's role to make their audience understand those undercurrents even if they have to re-word those utterances so the listeners can fully understand what was originally said, or by using appropriate synonyms and then through their non-linguistic means, for example: tone of voice (Ibid).

The role of interpreters has been debated for many years by scholars where some see their role as mere people who transfer the spoken message from the source to the target language, with no omissions or additions. While

others see the role of interpreters extending beyond the mere transfer of words and messages; they see messages as utterances loaded with spoken and unspoken cultural essences that need to be transferred too. The starting point was to strongly encourage the students to watch and listen to the news in their respective languages daily, and to watch a soap in either language at a regular basis. Watching soaps not only teaches the students the culture of the language they are watching the soap in but it will also introduce dialects to their language with all what accompanies dialects; these are things that are not easy to teach from books.

The cultural week and project was introduced: This is undertaken within the first half of the first semester where the students are merged with other interpreting students but from mixed language groups, and they have to travel around certain parts of the UK and come back with a comprehensive report on cultural issues they picked up in their travels; this is complemented by a comparison of these cultural issues with similar cultural issues from their own culture. This not only improves their language skills as they have to speak with native speakers of English at an early stage of their course, but it also improves on their general knowledge and of their cultural knowledge. An added bonus is that this exercise improves the bonding between the students and enhances therefore their learning experience. The timing of this project week is so that the students have had the first half of that semester focussing on learning interpreting skills and coping skills such as paraphrasing, synonyms and note taking, for example; after they have practised those skills, it is good for them to go out and bond together and start on other skills building such as general knowledge and the like.

Interpreters who seek good training skills should have a high time-allocation within that training for both ethics and ethical dilemmas and for cultural issues that might arise in various interpreting situations; that is not always the case. Many interpreting training providers focus on the transfer of linguistic skills and coping techniques and leave the ethics training for the student to obtain as they go along building their experience. A study conducted by Hale (2007) shows how interpreters perceive their own roles; in answer to a questionnaire sent to 293 participants, many interpreters answered that their role was to interpret faithfully and accurately and that it was not their role to explain cultural nuances or ambiguities; one went as far as to say that his role was to: 'ensure that communication has occurred, but not necessarily to ensure that the information has been understood. That is the responsibility of the parts involved'; another sees his role would extend to educating the parties at a cultural level, if the situation necessitated this; while a third sees his role as a cultural bridge amongst all parties involved, while a fourth sees that by brokering communication on cultural issues, he is thus breaking the rules of his Code of Ethics. Further, this Hale study

showed that the role of interpreters as seen by the interpreters themselves is seen differently depending on the various interpreting settings. Undoubtedly, breaching the Code of Ethics should never pose a dilemma when it comes to life threatening or life changing situations (rape cases, patients stating to interpreters they want to commit suicide or have an STD, etc).

To gather all the above components in one session so the students can incorporate their learning into practice, a weekly mock conference for all the language groups is held using a different theme every time. During those sessions, which are tutor led initially but then swiftly move to be student led in order for the students to appreciate what goes into writing speeches and for them to practise public speaking, the students will face the accents of their peers, which can be hard to decipher at first (for example, the Arabs cannot always pronounce their Ps while the Chinese omit some letters when speaking in English), but the cultural inferences that come in natural speeches will appear, such as idioms, jokes and so on. For example, in a mock conference held one December, the German students referred in one of their speeches to Rudolph, one of Santa's reindeers, but the Arab stream students missed that reference as they were totally unaware of Rudolph.

More importantly, the students are exposed to the formalities of working as a team in a booth, what to do when faced with technical problems, how to use relay fast, how to communicate with other colleagues, if required, and the logistics of meetings, (fire drill announcements are the best example, where the students do not think at first that there is a need to interpret those utterances which in real life could be detrimental to saving the delegates lives should a fire break out).

Another attempt at mixing the language streams is in a module for Technical Business interpreting, where the students use liaison interpreting. This session works well in honing in on body language refinement and teaching the students to take control. The sessions are real life assignments that the tutors themselves have dealt with during their professional careers. The tutors deliberately carry on with the errors the students make in order to show him the consequences of miscommunication during such meetings. The tutors have the chance on such occasions to digress and make side comments, some of which may be impolite, in order to train the students on using their memory and to make full use of their notes but also to take control, if necessary.

Two other modules finish off the set, and they are IT for interpreters and translators and Theory of Interpreting.

### **Assessment of course design**

In order to assess if the design is at the least sufficient for the current global needs for conference interpreters, we can simply look at what some

scholars advocate designers include in their courses. Schöffner & Adab (2000) say that to define competence in translation (and hence interpreting) we need to assess sub competencies, such as the quality and appropriateness of the target text. For example, in the case of interpreting, has the message come across in a clear, accurate and smooth manner, or not? They also say that we must assess the process itself, in other words, the efficacy of the decision making process when choosing how we render our interpretation.

Other sub-competencies discussed include language ability, textual ability, subject ability, cultural ability and transfer competence. Other theorists add bilingualism as a competence, which is not up for discussion in this article, but which can be cited to show another unique point of this course design, where two of the senior lecturers on the course who are heavily involved in its design and teaching are actually registered as bilingual. Other scholars have added 'register' sub competence as another important factor to be taken into account. Some might argue that linguistic ability is a skill that should not be listed as it is natural that the interpreter should have the language ability of his language pair; but what is meant by linguistic skills are skills such as the use of proverbs, metaphors and idiomatic expressions and which should be included in both types of training in addition to the different registers an interpreter may face depending on who he may be interpreting for. Alexieva (cited in Pöchhacker (b) 2008: 224) sees the importance of the interpreter's command of languages especially in the cases where the source language is not the native language of the interpreter and where this will affect his verbal and non-verbal rendition, for example in literally translating metaphors rather than finding an equivalent therefore leading to structures that are either non-existent in the target language or worse they mean something totally different.

From the above sub-competencies we can analyse and list pre-requisite qualities, which are: knowledge, skills, awareness and expertise; without those pre-requisites it would be hard to develop in a person the sub-competencies required to train them to become efficient interpreters. Awareness includes awareness of the communicative situation, such as the purpose of the interpreting event, the clients involved in the event (partners as some call them) and how to apply your knowledge to be able to make a conscious decision when choosing how to render your interpretation. All the above inform and guide the course design for training interpreters.

### **The Course at UCLan**

The course is open to all students who have a suitable undergraduate degree (or equivalent) and who are fluent enough in English (IELTS 6.5 or equivalent) plus another language at least. The direction of the interpreting was decided from the start to be different to other universities that offer

conference interpreting where native speakers of English normally interpret from 2 other languages into English only. The author did a quick search on the internet and found that of the 28 universities across the UK (incl. Wales and Scotland) that offer translation courses, only 12 offer interpreting and within those 12: one has 2 languages on offer only, 1 has Chinese only, 1 is distance learning, and only 1 uses both directions regardless of the mother tongue of students.

At UCLan, native speakers of English have to interpret in both directions; the reason behind that is that conference interpreters, especially in the ongoing current economic hardship, need to interpret in two directions at conferences, excluding certain international organisations like the EU where they only interpret into their mother tongue. To increase the employability possibilities for our students, it was felt that it was imperative that they could move in both directions. To further prepare the students for the real world, a year-long module was created where the students are taught the business side of freelance interpreting. In this module, the students are shown how to prepare for assignments and how to write their CV's, how to equip their offices and market themselves, train their voices and insure them, plus how to practise public speaking, among other things. Most of the lectures given were from the lecturers' own life experiences and reflect the problems they themselves faced when they went out into the world of interpreting without having been properly equipped with the important information that would have saved them money and time.

The other point of difference between UCLan and many other universities is that simultaneous interpreting is taught from the start of the course, rather than in semester two; it is also taught alongside consecutive interpreting, which also starts from semester one rather than what is seen in many (semester two). The two interpreting modules are taught in both directions, as already mentioned, and are done thematically; so the students are exposed to speeches related to agriculture, tourism, health, politics, international organisation, law and international law, finance and economy plus education and tourism and so on. By the end of the year, the students would have been exposed to enough vocabulary on such topics that they would be able to cope in most settings instantly. The texts are chosen carefully so that they would include idiomatic expressions, proverbs, numbers and culture (humour, anger, sarcasm, taboo, etc).

Dialects and accents are used in semester two when recording the source speeches for interpreting so the students do not find themselves too comfortable with one dialect or one accent, but then find that they struggle in the real world where no one person speaks in the same dialect or accent to the other. For English speeches, initially the lecturers' own voice recordings were used (length and speed of recording increased with the passage of time

to improve the students' stamina) but then regional dialects were slowly introduced (Welsh, Scottish, Yorkshire, Irish), then foreigners speaking English were added to the collection of recorded speeches, for example an Arab or a Frenchman speaking in English. Although this challenged the students, in the end they saw the advantage of it.

Translation was a module that is used as back-up for the interpreting students in enhancing their language skills. The texts chosen included technical, medical, legal texts plus advertisements, journalese and literary language. Translation of business letters and CVs and power point slides is included plus sight translation as these are all skills used by conference interpreters.

**Coping Skills:** During one interpreting lesson a week, the students have a quiz on general knowledge to ensure that they do keep up to date with world news of all types but also that they have enough background knowledge to other matters that may crop up during interpreting sessions. So, in addition to linguistic and cultural skills, the students have to work on their general knowledge. The lecturers believe that students need more than that, and their memory enhancing exercises are taught from the start in addition to how to manage stress and control it so it works for us rather than impede our performance. Gillies (2004) emphasises the importance of gaining general knowledge when he talks about how transferring words from one language to another is one thing but that to reach the ideal situation is for the interpreter to totally understand the concept of the subject matter so they can really speak fluently using idiomatic expressions in their active language. He emphasises how interpreting becomes much easier when we know and understand the subject matter.

Active listening and analysis of texts is undertaken within a week of starting the course as part of the coping mechanism the students need to use. The students need to be able to differentiate between primary and secondary information before they can successfully interpret the segments they are listening to. To ensure the 'whole' of the student is assessed, many sessions are video recorded and the students then watch their own performances together; the idea is for them to recognise their own indiscretions such as twitches, stuttering or pen clicking. Video recording also enables the students to recognise the significance of body language while interpreting such as maintaining eye contact while interpreting, voice modulation and poise as all these confer confidence onto the interpreter, as mentioned by Schweda-Nicholson (1985). For simultaneous interpreting other coping skills taught include *décalage*, anticipation and reformulation, also known as paraphrasing.

In summary, the current course at UCLan comprises the following modules:

- Consecutive interpreting (Bi-directional)
- Simultaneous interpreting (Bi-directional), including the mock conferences
- Technical Business interpreting
- Translation
- Theory of interpreting
- IT for interpreters
- Consultancy for interpreters, and
- Dissertation

A new module will be starting next year, which is interpreting for diplomatic and international organisations, in response to demand by many applicants; it was felt it could be added as an option for those who wish to be more specialised in that field. The course design allows for this flexibility, so long as the applicants take on the two main interpreting modules where the practice of interpreting and its skills is at its maximum and then add on the optional module instead of one of the standard ones.

### **Time allocation for each training aspect**

Based on the Master's degree in conference interpreting and translation at our institution the following table (Table 1) has been put together to compare the training times allocated for each activity mentioned earlier; this is not to say all institutions allocate the same time for each activity; some institutions may allocate little time for most activities, while others omit some and focus on merely the techniques of interpreting rather than the coping techniques as well. Ideally, all activities should be seen and undertaken in training of both types and at a level that would be at the least of medium time allocation.

It must be noted that the perception of time allocation is seen in the context of interpreting related modules only. This means, the percentage seen across the full year training course does not take into account non-interpreting modules such as IT training, Interpreting Studies or Consultancy Business. In addition, the time allocation refers to the formal hours set aside for those activities; most activities are given more time, but on ad hoc basis, hence this time has not been taken into account here.

In the course, which has business interpreting embedded as a full module, the time allocation for each activity is as follows: For memory training two full sessions (4 hours) are allocated at the early stages of the course. As for paraphrasing, initially a single session at 2 hours is given then ongoing exercises weekly at 10 minutes each time over 30 weeks = 300 minutes which equals 5 hours, hence the annual total per academic year is 7 hours. Synonym exercises are equal to paraphrasing at 7 hours. Note taking

takes the lion share of the interpreting student's training as it is taught intensively for the first two weeks which is 8 hours and then at 20 minutes at the end of each lesson twice weekly over the remaining 26 weeks = nearly 17 hours. Add the initial 8 hours which gives a total of 25 hours of note taking training over the academic year. Linguistic skills are gained continuously through continuous feedback in each session and although this is hard to quantify it does go into the bracket of high time allocation. As for non-linguistic skills, again this takes place through regular and on-going feedback, but only in some of the modules, as it is not valid as a point of discussion in some modules such as simultaneous interpreting or in translation where the client is not in direct contact with the interpreter, therefore although it is considerable, it would be categorised under low to medium time allocation. Ethical considerations are discussed during the academic year, but this only takes over a small period of time at about 1.5 hours per academic year. Cultural awareness takes place informally too, although special speeches are chosen deliberately for one week in addition to the cultural project where students travel to different parts of the UK to learn about British culture; they return to give presentations to the whole class about the cultural aspects they had learned in addition to some cultural aspects specific to their own home countries. This means that time allocation for culture goes into the field of medium exposure. A voice coaching expert comes in for 3 hours a year. Finally for general knowledge, the students are asked weekly about information of current and past issues ranging from politics, trade and economy, history, finance, education, sport, religion, culture and so on. This takes about ten minutes a week making it a total of 5 hours per academic year. In addition to that, general knowledge is increased continuously by the very fact of the lecturer varying the themes of the texts chosen for interpreting on a weekly basis.

The table below shows a summary of the time allocation for some parts of the training.

Table 1: time allocation for coping techniques for student interpreters

Training Type	Training Time Allocation
Memory training	Medium
Paraphrasing	High
Synonyms	High
Note taking	High
Linguistic skills	High
Non-Linguistic skills	Low-Medium
Ethics	Low
Cultural issues	Medium
Voice coaching	Low
General knowledge	High

### Conclusion

By looking at the required sub-competencies suggested by Hatim (2001) and Schweda-Nicholson (1985), Gillies (2004), Alexieva (2008) plus Schöffner & Adab (2000) who look at aspects such as linguistic and cultural skills in addition to teaching coping skills and ethics and improving interpreting trainees' general knowledge, and by comparing those to the skills taught at our institution and the time allocated to each of those sub-competencies, it is clear that the course design has indeed incorporated the requirements advocated by scholars for optimum interpreting training; the setting of this training within an academic environment, and the option of a free extra language module for any of the students add value to this course. Students are treated wholly, where other matters such as the business side of things and the lifestyle that ensures optimum well-being are looked at formally within a whole module, in which case the vocational plus the theoretical aspects have been merged to give the students the best chances of employment on graduation.

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# **THE IMPACT DIMENSIONAL OF DELIMITERS ON TESTING AND TRAINING DUELS DRIBBLING IN YOUNG SOCCER (UNDER 15 YEAR)**

*Zerf Mohammed MCA*

*Bengoua Ali, PhD supervisor*

Physical and Sports Education Institute Mostaganem,  
Sports Training department laboratory OPAPS,  
University Abdel Hamid Ibn Badis Mostaganem, Mostaganem, Algeria

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## **Abstract**

The delimiters are the most important tools, widely used in training and tests soccer, because they embodies the dimensions of the surface and the role of defender in major of the exercises for Soccer. That literature review 90% of soccer books use the smallest delimiters (plate) and 100% of our young soccer Algerians coaches (under 15 year) composed their sessions. from that the objective of our study focuses on the different forms and volumes of these last lend, based on these differences our hypothesis confirms that they affected the information (indicators from the external environment) and qualities coordinators during the change of direction (obstruction of the upper body player). Our experience is based on a practical protocol of Vankersschaver Jacques1982 from his study entitled "Role of Visual Index and Cognitive Process in the Acquisition of a Gesture Football Technique". Were we have introducing the different kinds of delimiters (fig1) and the inactive player to determine the most type of delimiter appropriate to evaluate and train duels with ball in young soccer. Were our finding confirmed: (1) The mannequin is the most delimiter appropriate for testing and progress in duels soccer. (2) The progress in training duels requires the smallest (familiar with the gest) arrive at the mannequin to perform with the gest (1vs1). (3) The objective of duels requires the involvement of the commitment of peripheral vision for information and central vision to master the ball. From that, the best dribbler is the player who lifts his head when he moves with the ball.

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**Keywords:** Dimensions of delimiters, Duels, dribbling, young soccer under 15 year

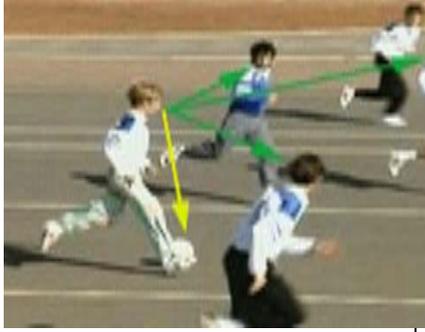
## **Introduction**

Dribbling in soccer is the ability to control the ball with the feet while moving around the field. The player with that “something special” makes the crowd sit up with anticipation when he gets the ball at her feet. (Wang, 2006) Perfect ball control can be broken down into four stages: -Preparation for the initial contact with the ball (perception, running into free space, adopting a suitable body position (Shriener, Peter, 2009). From that, Dribbling is one of the most important and fundamental soccer skills. Every soccer player must execute dribbling well because it is intertwined with many other skills such as passing, defeating an opponent, adjusting the pace, implementing (Debra Laparth, 2009). Depending on the importance of this skill, our study based in indicates of (Claude Doucet, 2005) that the category under 15 year is as stage discovery to discover football with 11 players. (Philippe Leroux, 2006) Confirms that the work requires adaptation, including the development of basal and efficiency gained within a complex way that serves its predecessor competitive training. (Bouzid Drissi, 2004) believes that the importance of this station is the development of develop dynamic visualization and processing information coming from the external environment (discount / colleague) in order to assess the situation (time and vacuum) in the construction of tactical thinking.

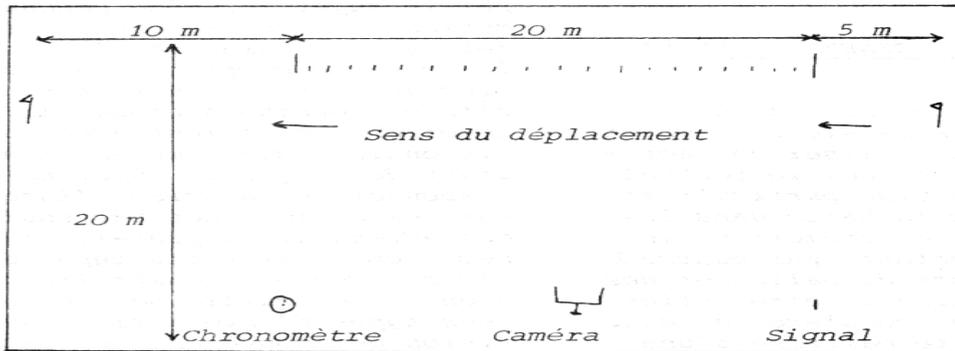
The importance of this study was to reveal impact of the different forms and volumes of the delimiters in evaluation of difficulty control motor in dribbling soccer ball between the training and the exigency of the competition situations. For that, we have chosen the analysis of Regression, correlation, Anova and the LSD, to determine the most type of delimiter appropriate to evaluate and train duels with Ball in Young soccer (under 15 year).

## **Method**

The study sample consisted of 21 players who master the skill dribbling and play in the national championship (Oran football league) that we have tested in four situations for the interest of which difference can we observed in our protocol experimental.

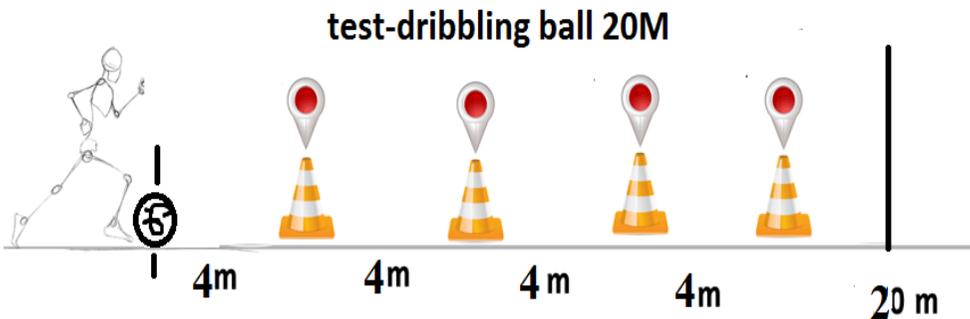
Fig1 the different forms and volumes of The delimiters used in training and tests soccer				
Situation1	Situation2	Situation3	Situation 4	The objectives of dribbling under year15
				

Inspire from Figure 2. Organization Equipment experience Vankersschaver Jacques1982  
 (J. VANKERSSCHAVER, 1982) Case 910, 13288 MARSEILLE Cedex



**Procedures**

The Players chosen were tested in four situations environment bases on the test-dribbling ball (fig3 Based in situation indict in fig 1)  
 Fig3 test-dribbling Ball soccer



## Results:

Table 1 shows the results of the sample within the proposed positions (Time)

PLAYERS Time	 plate	 Pike	 mannequin	 DEFENDER
1	4.81	6.43	7.05	7.06
2	4.93	6.31	7.02	7.04
3	6.38	7.09	8.09	8.07
4	5.8	7.15	7.75	7.7
5	5.32	6.88	7.52	7.59
6	5.55	6.52	7.29	7.3
7	6.12	6.49	7.46	7.44
8	4.72	5.96	6.62	6.59
9	4.83	5.95	6.29	6.31
10	4.99	6.88	7	7.11
11	4.74	7	7.88	7.89
12	4.84	6.92	7.48	7.52
13	4.98	6.82	7.26	7.23
14	5.89	6.89	7.18	7.17
15	5.56	5.72	6.77	6.8
16	5.62	6.72	6.86	6.84
17	5.45	6.94	8.22	8.25
18	4.99	7.12	7.03	7
19	5.02	6.58	6.75	6.78
20	4.97	6.55	6.85	6.8
21	5.8	7.45	8.69	8.7
MEAN	5.30	6.68	7.29	7.29
SD	0.494151	0.436401	0.584254	0.58542

Through Table 1 where the arithmetic average calculate shows that, the difference size and shape of the delimiters are difficulties that we must consider when we evaluate the dribbling skill in Young Soccer (under 15 year)

Table 2 shows Nature of the Correlations within the proposed positions(Time)

		Plate	Pike	Mannequin	Defender
Time plate	Pearson Correlation	1	.314	.498*	.481*
	Sig. (2-tailed)		.165	.022	.027
	N	21	21	21	21
Time Pike	Pearson Correlation	.314	1	.760**	.756**
	Sig. (2-tailed)	.165		.000	.000
	N	21	21	21	21
Time mannequin	Pearson Correlation	.498*	.760**	1	.998**
	Sig. (2-tailed)	.022	.000		.000
	N	21	21	21	21
Time DEFENDER	Pearson Correlation	.481*	.756**	.998**	1
	Sig. (2-tailed)	.027	.000	.000	
	N	21	21	21	21

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

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

By Table 2, which represents the Correlations within the proposed positions we confirm that all the proposed positions measure and evaluate the dribbling skill in Young Soccer (under 15 year) Since the significance of the Correlations within the proposed positions varied from case to case (0.05 TO 0.01)we Posed the following question

- Which delimiter is the most appropriate to evaluate and train duels (1V1) in Young soccer (under 15 year)! Whom we leads to calculate Anova

**Table 3 shows ANOVA To the proposed positions(Time)**

the proposed positions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	55.509	3	18.503	66.012	.000
Within Groups	22.424	80	.280		
Total	77.932	83			

By contrast, F calculation it is statistically significant In favor of witch proposed positions for that we have calculated LSD

**Table 4 shows Multiple Comparisons of the proposed positions(Time)**

LSD of the

Dependent proposed  
Variable: positions

(I) VAR00005		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Time Plate	Time Pike	-1.40043*	.16152	.000	-1.7219	-1.0790
	Time Mannequin	-1.97725*	.16152	.000	-2.2987	-1.6558
	Time Defender	-2.02005*	.16763	.000	-2.3536	-1.6865
Time Pike	Time Plate	1.40043*	.16152	.000	1.0790	1.7219
	Time Mannequin	-.57682*	.15963	.001	-.8945	-.2591
	Time Defender	-.61962*	.16581	.000	-.9496	-.2896
Time Mannequin	Time Plate	1.97725*	.16152	.000	1.6558	2.2987
	Time Pike	.57682*	.15963	.001	.2591	.8945
	Time Defender	-.04280	.16581	.797	-.3728	.2872
Time Defender	Time Plate	2.02005*	.16763	.000	1.6865	2.3536
	Time Pike	.61962*	.16581	.000	.2896	.9496
	Time Mannequin	.04280	.16581	.797	-.2872	.3728

\*. The mean difference is significant at the 0.05 level.

From the table 4 all the comparison are on the favor of Time Defender accept his comparison with Time Mannequin. Since the significance is not significant between Time Defender and Time Mannequin, we chose to study causal relationships by the regression methods

Table 5. (a): shows the regression method, Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Time mannequin		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Defender

From the table 5 (a) we note that the regression method, which is, used in a manner model 1 is the Stepwise where the program has shown the introduce of Time mannequin as the independent variables in the equation of multiple linear regression.

Table 5. (b) shows the Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.998 <sup>a</sup>	.996	.995	.04019	.996	4223.807	1	19	.000	2.354

a. Predictors: (Constant), mannequin

b. Dependent Variable: Defender

Table 5 (b), we note that the four values of the sample correlation and the coefficient(R Square- Adjusted R Square), are significant in the Predictors used in Model 1. Form that we confirmed the independent explanatory variables Time mannequin was able to explain the changes in the Dependent Variable Time Defender in measure and evaluate the dribbling skill required and the rest (0.02) is attributable to other factors.

Table 5. (c) shows ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.824	1	6.824	4223.807	.000 <sup>b</sup>
	Residual	.031	19	.002		
	Total	6.854	20			

a. Dependent Variable: DEFENDER

b. Predictors: (Constant), mannequin

As it is noted in Table 5 (c) of the variables Predictors includes in analysis to defined the explanatory power of the model 1 based by the calculi of F. As can be seen from the High explanatory power of Multiple linear regression model from a statistical point the F test High moral (P <0.000), from that we confirms the High moral explanatory power of the models chosen of the multiple linear regression statistical.

Table 5. (d): shows Coefficients<sup>a</sup>

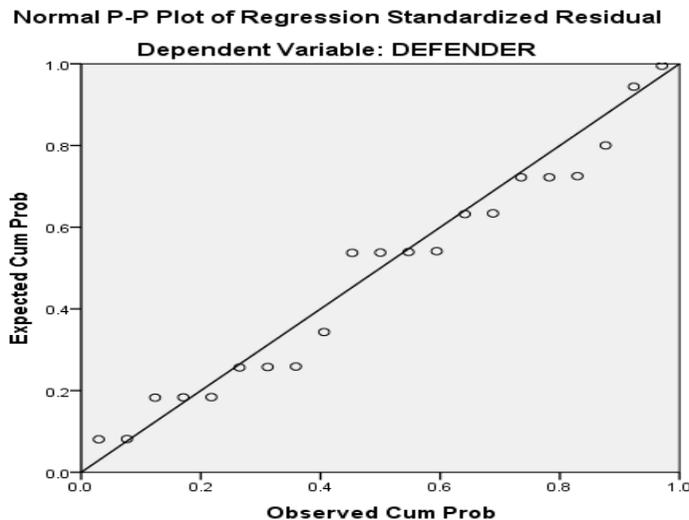
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	.008	.112		.071	.944	-.227	.243
Time mannequin	1.000	.015	.998	64.991	.000	.968	1.032

a. Dependent Variable: Defender

We conclude from the Table 5 (d) that the independent variables were significant from a statistical point of these tests that we confirmed by t (at the moral level of  $P \leq 0.000$ ) in all comparisons, which it is the Reason to explanatory power of the moral analysis of variance Regression. Form that our equation: Regression line Time Defender = 0,008+ time of mannequin

#### Figure 4: shows Normal P-P Plot of Regression Standardized Residual

Dependent Variable: time case Defender. Diagram of the points that we find clustered around the Line so the data (residuals) distributed according to the normal distribution of the variables expertise in our study



We conclude from the Table 5 (a-b-c-d) that the mannequin is the delimiter the most appropriate to evaluate and train duels with ball in young soccer (under 15 year). The reason of our chosen topic is Due to: first - confirmation of (Mowaffaq al-Asaad Mahmoud, 2009)the individual, skills in football cannot be measured directly, secondly to -the conflict that the dribbling test measures the speed and agility for some authors where (Philippe Leroux, 2006) confirms that this test measures the speed not the

agility. From the conflict, our finding and recommendations agreed with instructions of (Ekalh Suleiman and Abdel Karim Abdel Rahman Youssef, 2002): that the length of the delimiters must exceed 1.50 meter to measure the agility as motor quality. Generally said from this study, the researcher attributed the importance of it in the processing information where the input which influences the output of the ability adopt the correct movement. Form that we agreed with the notice of (Hassan M. Abou-abida 2008): that the soccer decision depends on the player's ability to respond to external stimulation in the real situations (competition as duel 1vs1).

### **Conclusion**

Duels are between 30 and 40% of the shares of a football game. The duel is a conservation action (dribble), which aims to find a partner in a free space or to score goals. From the Conclusion of (ASEP, 2009), that too much emphasis has been given to learning the techniques and not enough on learning the art, that is to say, learning is how to use the techniques in competition. Our study reference came to explain the impact of demotion of the delimiters chosen as a tool in evaluation or training in the adaptation of the correct movement in duels. Which is consistent with the study (Zerf Mohammed, 2012) that defects of the short delimiters, it lies in the absence of block top section of the body, which contributes to focus on the ball. Whereas depending on training in advanced stage contributes to develop the central vision in the account of the peripheral vision, which contributed to the loss of control in the body and ball due to the lifting of the head, or change direction because of a lack of physical requirements (agility balance flexibility). As for the height not wide (Pike) the problematic is due to the similarity lies in the skill and accomplishment Living situation that the output absence of opposition for the upper part of the body. We guide to recommend that the most type of delimiter appropriate to evaluate and train duels with ball in young soccer (under 15 year) is the mannequin. Because our finding confirmed:

(1) The mannequin is the most delimiter appropriate for testing and progress in duels soccer. (2) The progress in training duels requires the smallest (familiar with the gest) arrive at the mannequin to perform 1vs1. (3) The objective of duels requires the involvement of the commitment of peripheral vision for information and central vision to master the ball. From that, the best dribbler is the player who lifts his head when he moves with the ball.

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# **BODY MASS INDEX IN RELATION TO PERSONAL CHARACTERISTICS, SOCIAL ENVIRONMENT AND INDIVIDUAL'S PERCEPTIONS IN A REPRESENTATIVE POPULATION IN ROMANIA: A CASE-STUDY**

*Cristina Petrescu, Associate Prof., PhD, MD*

“Victor Babes” University of Medicine and Pharmacy Timisoara /  
Department of Hygiene, Romania

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## **Abstract**

Aim of study. In this study I investigated Body Mass Index (BMI) and its relation to personal characteristics (gender, age, ethnicity), social environment (marital status, place of study), and individual weight and activity level perceptions in a statistically representative population of students in Romania. Material and method. The method was observational inquiry (case-study) and consisted of a questionnaire with 60 items from which I considered only 9 items (Q1.a–gender, Q1–age, Q2–marital status, Q3–nationality, Q49.a–weight, Q50–height, Q53–perception of own weight, Q54–perception of activity type and Q60–place of study) applied in 13 universities to 1364 students (39.3% male, 60.7% female, aged 19-30 years). The questionnaire application lasted 30 minutes and the students completed it individually and anonymously. Consent was asked for and the aim of the study was explained to participants. The Body Mass Index (BMI) was calculated using the Quetelet formula. Statistical work was performed using a SPSS 20 Program. Results. I found significant associations between: BMI–perception of the person's own weight ( $\chi^2=449.95$ , Sig.=0.000;  $\gamma=0.84$ , Sig.=0.000), BMI–place of study ( $\chi^2=105.87$ , Sig.=0.000;  $\gamma=-0.15$ , Sig.=0.000), BMI–gender (Chi square– $\chi^2=111.19$ , Sig.=0.000; gamma coefficient– $\gamma=-0.56$ , Sig.=0.000) and BMI–marital status ( $\chi^2=24.28$ , Sig.=0.002;  $\gamma=0.27$ , Sig.=0.000). In conclusion a relation BMI–perception of the person's own weight, BMI–social environment and BMI–gender is suggested.

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**Keywords:** BMI, body image, gender, marriage

## **Introduction**

Gender and age of a person relate to his/her physical development. Individuals belonging to different ethnic groups or races show differences between body dimensions (Mungreiphy et al., 2012). Marital status could create different nutritional patterns followed by different nutritional behaviors in people. Perception of body weight or activity type of the evaluated students corresponded or did not correspond with the evaluation results in different studies (Yost, Krainovich-Miller, Budin & Norman, 2010; Sand et al., 2014).

BMI (Body Mass Index) is a valuable indicator for estimating the nutritional status of students and is also useful in case-studies. The importance of anthropometry complex application was proved by epidemiological research studies on healthy individuals and patients with various diseases (Petykhov, Maev & Deriabin, 2012; Tutkuvienė, 2006).

In the second part of the twentieth century, evolution of the physical development of children in Romania was quite different from western European countries. The secular trend (maximal rate of physical development parameters achieved in the 20<sup>th</sup> century in Western Europe and US) did not manifest itself (Arbore et al., 1998; Vlaicu, Doroftei, Petrescu & Fira-Mladinescu, 2000). The transition to the post-communist period (1989-2015) was characterized by many gaps in physical development measurements.

The rationale of this study is Body Mass Index investigation in young people who have grown up during this transition period for Romania. The aim of this study was to investigate Body Mass Index (BMI) and its relation to: personal characteristics (gender, age, and ethnicity), social environment (marital status and place of study), and the perception of their own weight and level of physical activity provided by students from thirteen universities in Romania.

## **Material and method**

The material of study consisted in a statistically representative sample (1364 students, 39.3% male, 60.7% female, aged 19-30 years) selected from 13 universities (Tirgu-Mures, Bucharest, Constanța, Tulcea, Timisoara, Zalău, Cluj-Napoca, Baia Mare, Brașov, Sibiu, Iași, Pitești, Craiova) of Romania through stratified random sampling.

The method was an observational inquiry (case-study) and consisted in applying a Health Questionnaire (60 items) from which I chose 9 items (Q1-age, Q1.a-gender, Q2-marital status, Q3-nationality, Q49.a-weight, Q50-height, Q53-perception of own weight, Q54-perception of activity type and Q60-place of study). The students were given a 30-minute questionnaire

and completed it individually and anonymously. Consent was asked for and the aim of the study was explained to participants.

For each student I calculated the Body Mass Index (BMI) using the Quetelet formula:  $BMI = \text{weight (Kg)} / \text{height (m)}^2$  (Quételet, 1832).

In order to avoid low number cases (under five) I reduced the 7 intervals of BMI to 3 (1.BMI lower than 18.5; 2.BMI 18.5-25 - etalon and 3.BMI higher than 25Kg/m<sup>2</sup>). Statistical work (Chi square and gamma correlation) was performed using a SPSS 20 Program.

## Results

### BMI related to personal characteristics

In the investigated sample I noticed a BMI variation for each year of the students` age. Therefore the median (21.87) was lower than the mean (22.38) of BMI, and I observed a tendency of BMI to increase with age (from median=20.31 at 19<sup>th</sup> to median=25.08 at 30<sup>th</sup>) (figure 1).

BMI for males (median=23.66) was higher than BMI for females (median=20.56) and was also higher than the BMI of the entire sample (median=21.81) (figure 2a). The BMI of Hungarians (median=22.46) was higher than the BMI for Romanians (median=21.79) and was higher than the BMI of the entire sample (figure 2b).

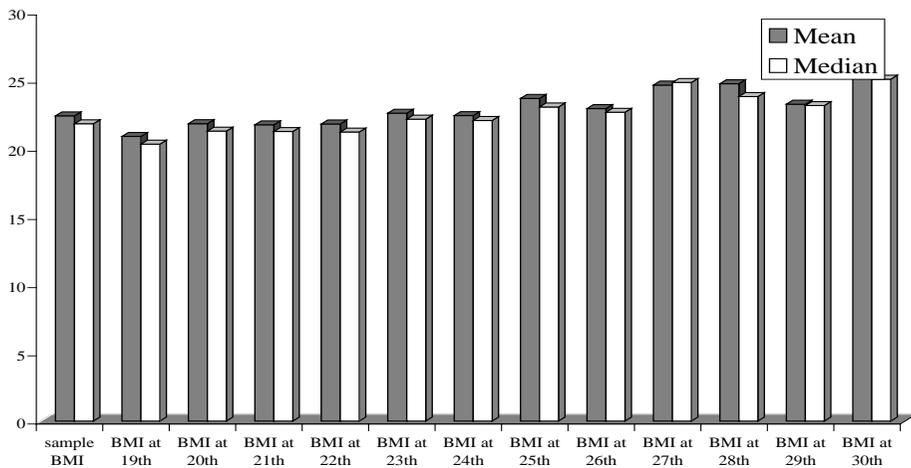


Figure 1. BMI values (mean, median) depending on age

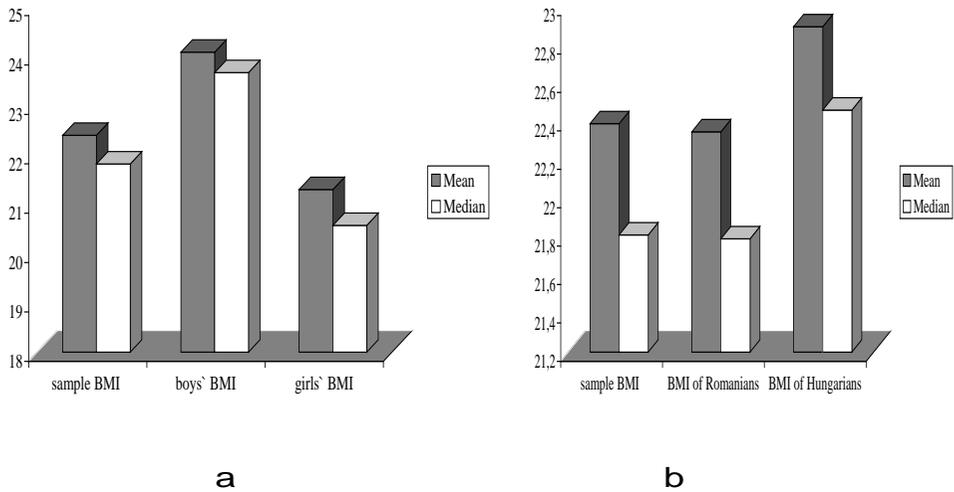


Figure 2. BMI values (mean, median) depending on gender (a) and ethnicity (b)

### BMI related to social environment

BMI of married students (median=22.98) was higher than BMI of the entire sample (median=21.81) and higher than the BMI of unmarried students (median=21.6) (figure 3). The highest values (mean and median) of BMI in terms of place of study were found in Bucharest (24 and 24.82), Tulcea (23.2 and 22.8), Zalau (24.15 and 23.41), Cluj (22.62 and 22.15) and Baia Mare (22.94 and 22.49). These values were included in the normal nutritional status interval of BMI (18.5–25) (figure 4).

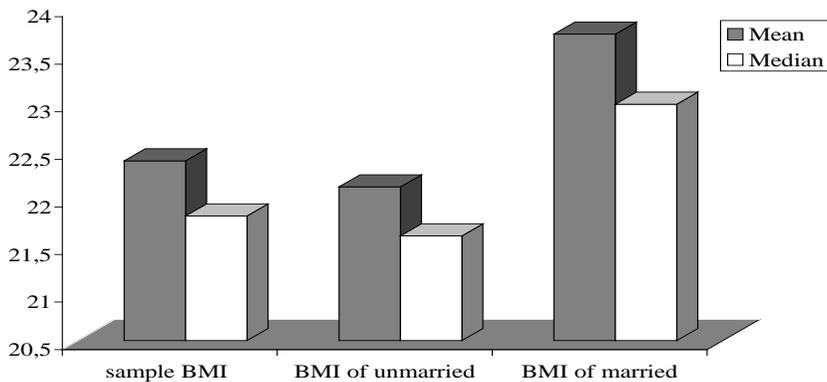


Figure 3. BMI values (mean, median) depending on marital status

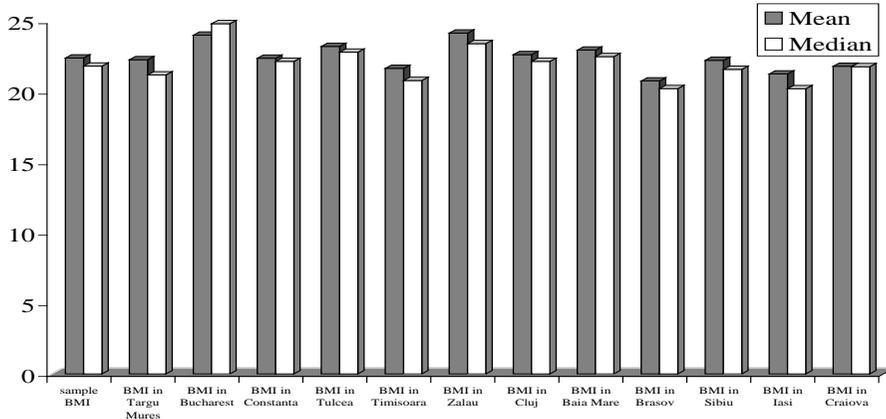


Figure 4. BMI values (mean, median) depending on place of study

### BMI related to the students' own weight perception and activity levels

In this study I found that the students' perception of their own weight in relation to their BMI was correct (figure 5a). Therefore, BMI (median=18.5) of the students who perceived themselves as underweight was at the lower limit of the normal BMI interval (18.5-25), BMI (median=21.6) of the students who perceived themselves as having normal weight was included in the normal BMI interval and BMI (median=25.71) of the students who perceived themselves as overweight surpassed the upper limit of the normal BMI interval.

BMI of those who considered themselves sedentary (median=22.49) is higher than the BMI of the entire sample (median=21.81), the BMI of active students (median=21.79) and the BMI of extremely active students (median=21.52) (Figure 5b).

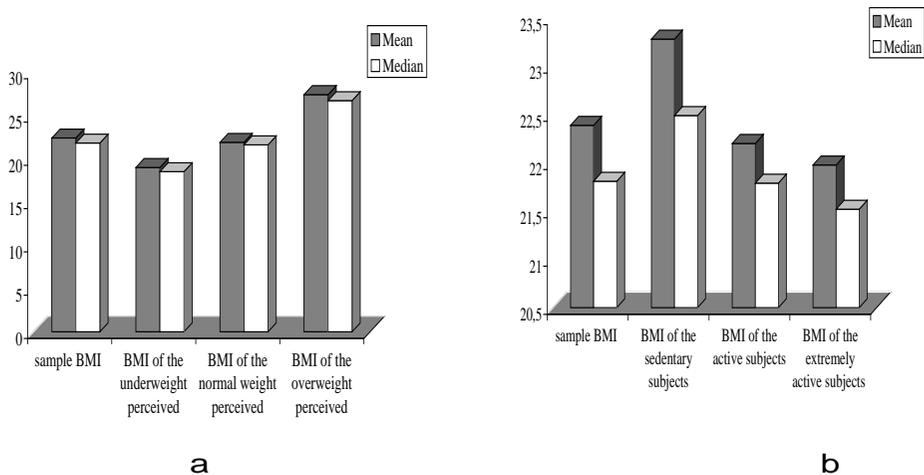


Figure 5. BMI values (mean, median) depending on students' perception of the own weight (a) and activity type (b)

In this study I found a statistically significant difference between BMI depending on age, BMI depending on marital status and the students' perception of their own weight (table 1) and positive gamma correlations BMI-age, BMI-marital status and BMI-students' perception of their own weight (table 2). I also found in this study a significant statistical difference of BMI depending on gender, place of study and level of activity and no statistical significant difference of BMI depending on ethnicity (table 1).

Table 1. Chi square test BMI – age, marital status, own weight perception, place of study, gender, type of activity, ethnicity

	X <sup>2</sup> value	df	Asymp. Sig. (2-sided)
Marital status * BMI	24.28(a)	4	0.000
Own weight perception * BMI	449.95(a)	4	0.000
Place of study * BMI	105.87(a)	24	0.000
Gender * BMI	111.19(a)	2	0.000
Type of activity * BMI	12.18(a)	4	0.016
Ethnicity * BMI	2.35(a)	8	0.968

a 0 cells (0%) have expected count less than 5. The minimum expected counts are 9.41, 11.82, 8.72; 60.01 and 18.96 respectively.

Table 2. Gamma correlations BMI with age, marital status, own weight perception, place of study, gender, type of activity, ethnicity

	$\gamma$ values	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Marital status * BMI	0.271	0.062	4.092	0.000
Own weight perception * BMI	0.848	0.021	14.904	0.000
Place of study * BMI	-0.156	0.034	-4.48	0.000
Gender * BMI	-0.566	0.042	-11.18	0.000
Type of activity * BMI	-0.127	0.052	-2.40	0.016
Ethnicity * BMI	0.106	0.109	0.95	0.341

<sup>a</sup>Not assuming the null hypothesis;

<sup>b</sup>Using the asymptotic standard error assuming the null hypothesis.

I found no significant statistical difference in the students's BMI in terms of their age. Negative gamma correlations resulted between BMI-gender, BMI-place of study, BMI-level of activity and no correlation was found between BMI-ethnicity of students (table 2).

## Discussions

Healthy students investigated in the 13 universities of Romania were born and have grown up during the transition period (1989-2014). Body mass index is an appropriate screening test to identify young people who should have further evaluation and follow-up for being overweight, obese, or malnourished (Freedman et al., 2009). BMI needs to be completed by a free fat mass and fat mass estimation (especially for gender and ethnic differences) for a better estimation of these differences (Nightingale et al.,

2013). Although the BMI is an imperfect tool, it is the most commonly used measure for assessing nutritional status in adults (Must & Anderson, 2006). In the performed study the calculated BMI (mean, median) of the investigated students is included in normal values interval (18.5-25 Kg/m<sup>2</sup>) and it suggests a normal physical development.

There is a tendency to create a supportive environment to combat obesity and to improve services with a role in modifying BMI (Ashrafian et al., 2014). Special programs of prevention and intervention (after-school or summer programs) influence diet and physical activity behavior and offer benefits for youth (Robinson, Webster, Whitt-Glover & Ceaser, 2014). It is interesting that the synthesis of school-based physical activity and nutritional education interventions showed no statistically significant mean reduction in children's and adolescents' body mass index (Guerra, Nobre, da Silveira & Taddei, 2014). On the other hand it is not necessary for obese individuals to attain a BMI of less than 25 to achieve a health benefit and a weight loss of 5% to 10% is the usual goal (Kushner & Ryan, 2014).

I analyzed BMI depending on students' personal characteristics (gender, age and ethnicity), I found similarities and differences in comparison with present research. For example, in this study a negative gamma correlation BMI-gender and a statistically significant difference between BMI values (mean, median) of male and female students were registered. In another study a similar significant difference in BMI was seen between women and men, suggesting gender differences (Kukreti & Bisht, 2013). Women proved to be less realistic than men regarding their weight appraisals (Morgenstern, Isensee & Hanewinkel, 2010). BMI (mean and median) increased with age and no statistical relevance BMI-age was found in this study. I did not find significant statistical differences between BMI of Romanian and of Hungarian ethnics and no correlation BMI-ethnicity resulted. In other studies different results regarding ethnicity were found, for example subjects belonging to three ethnic groups from India showed marked differences in different body dimension (Mungreiphy et al., 2012). The strong influence of social and economical factors on the nutritional indicators was seen in Georgia, with large variation depending on age, gender and ethnicity (Kharabadze, Khetsuriani, Betaneli, Mekokishvili & Chkuaseli, 2012).

In this study we found a statistically significant difference between the BMI values of married students and the BMI values of unmarried students and a positive correlation BMI-marital status resulted. Similarly, other studies showed that marital status and marital transitions, important features of the social environment, influence weight change over time and BMI change. Therefore, adverse social relationships can contribute to weight gain and BMI increase (Kouvonen et al, 2011). In Greek adults, marital

status was significantly associated with obesity and abdominal obesity status in both genders (Tzotzas et al., 2010).

This study showed real differences in BMI in terms of where the students learned and the place of study (another feature of social environment) correlated negatively with BMI. Therefore, BMI values were high in Bucharest, Tulcea, Baia Mare, Zalau, and Cluj areas, places where a dietary pattern with foods rich in fats and sweets is well known. To the contrary, it was demonstrated that young adults in Northern Finland, who live far away from local centers or in the most sparsely populated areas, are fatter than those who live close to local centers or in densely populated areas. This result was explained by variations in everyday physical activity in different residential environments (Näyhä et al., 2013).

A correct weight perception of underweight and overweight or obese students was found in this study as well as a tendency to include upper and lower limits of the normal BMI interval. In an American study correct weight perception was seen as useful in influencing weight-loss efforts in U.S. female adolescents (Yost, Krainovich-Miller, Budin & Norman, 2010). Gender differences were found in weight perception (Wang Liang & Chen, 2009) and inaccurate weight perception was associated with extreme weight management practices in high school students (Ibrahim, El-Kamary, Bailey & St George, 2014).

In this study I found a statistically significant association between the physical activity level reported by students and their BMI. A negative gamma correlation BMI - physical activity (from sedentary to extremely active) reported by students was found. Similarly, high moderate-to-vigorous physical activity time was associated with low body fat mass in both boys and girls and men and women (Kwon, Burns, Levy & Janz, 2013). Sedentary time could also be associated with PC activity and cellular phone excess usage. In both men and women, there was a relationship between self-assessed “good” physical fitness and high physical exercise, seen in a research study from southern Germany. Yet, in the study from Germany a large proportion of the study population was not physically active; the specific overweight subjects risk group was even less active (Rupps et al., 2012). The body fatness inheritability indicated in another study a smaller contribution of genetic factors and this result highlighted the importance of environmental factors in the etiology of weight gain and the obesity epidemic (Elder et al., 2012).

## **Conclusion**

Personal characteristics, social environment and the perception of their own weight and physical activity were all factors that were shown to be significant in terms of the students' BMI levels. Personal weight perception

and marital status related positively and statistically significantly with BMI. BMI values were higher in students who perceived themselves as overweight and in married students than they were in students who perceived themselves as underweight and unmarried students.

Gender, place of study and the students' own perception of physical activity related negatively and statistically significant with BMI. BMI levels were shown to be greater in boys, in localities with high density (Bucharest) and localities with a fatty and sweet diet pattern (Zalau, Cluj, Baia Mare) and in students who perceived themselves as sedentary than they were in girls, in the other localities of study and in the students who perceived themselves as extremely active. No statistically significant difference in BMI levels in terms of age and ethnicity was found in this study relation. A limit of this study is that it is a qualitative one and the relation between certain personal characteristics, social environment, and the personal perception of the students, regarding weight and physical activity to BMI, is only suggested.

Practitioners should pay attention to BMI in relation to: weight perception, gender and marital status in young adult populations (aged 19-30 years) with similar risky alimentary habits in order to prevent excessive weight gain and obesity.

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### **Ethical standards**

According to opinion no.285/ 05.08.2013 issued by the Ethics Committee of the Institute of Anthropology "Francisc I Rainer" research meets ethical standards stipulated by Act No.206/2004, as amended by Ordinance 28/2011 on good practice in scientific research and technological development and innovation.

**Declaration of interests:** None to declare.

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# CRITERIA FOR THE RETURN TO SPORT AFTER RECONSTRUCTION OF THE ANTERIOR CRUCIATE LIGAMENT (RACL)

*Heba Alaeddine, PT, DPT Student*

*Samar Delbani, PT*

*Hassane Kheir Eddine, PT, MS, DPT*

*Khodor Haidar Hassan, MD, PhD*

*Hassan Karaki, PT, MS, PhD*

Department of Physical Therapy, Faculty of Public Health,  
Lebanese University, Hadath, Lebanon

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## Abstract

**Background:** One of the objectives of the reconstruction of the anterior cruciate ligament (RACL) is the return of athletes to existing activity before the injury. Thus, it is essential to understand the variables that influence the return. Associations between the return to sport and the variables representing the strength of the quadriceps, instability and symmetry of the members, and the psychological state have not been studied in athletes following the RACL.

**Purpose:** The purpose of this study is to summarize the literature relating to the proposed variables to be associated with the return to sport following a reconstruction of the anterior cruciate ligament.

**Method:** During this study, we searched electronic databases, PubMed, Medline, Embase, and Cochrane Database to find the most recent articles about returning to the sport after the RACL criteria.

Therefore, the articles included in this review meets these criteria: 1) patients who underwent a RACL; 2) reported at least one measurement of quadriceps strength, symmetry between members, and the psychological state; 3) the return to the sport identified by subjective measures or action to identify the level of sports participation of patients; and 4) any relationship analysis between the measures and the return to sport.

**Conclusion:** Despite the fact that there are a number of important criteria influencing the return to sport, some have remained critical which have been considered and supported.

By analyzing the items, the following results were obtained as described below:

A quadriceps strength [IQ = 90%] and a motivating psychological state are the two criteria that ensures sport participation and reduction of the rate of re-injury or injury to the contralateral side. However, other criteria should not be neglected, with a view of their interaction with quadriceps strength and psychological status influence on the overall condition of the athlete wishing to return to the sport.

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**Keywords:** Knee, Measures, rehabilitation, kinesiophobia, self-Reported Measures, leg spring stiffness, sledge apparent strength.

## **Introduction**

### **Methodology of the Research**

The Ruptures of the anterior cruciate ligament (RACL) is the most common sports injuries of the knee. Thus, this type of injury requires medical intervention for its reconstruction. Basically, the costs of surgery is significant, and it can also result to various complications. When we talk about athletes, we talk about people whose individual wish is to acquire the same sport played before the break and at the same level. Consequently, since the future of these people depends on sporting activities, their main concern is to return as quickly as possible to the sport and to continue their activities in full.

Despite many positive results following the RACL reports, recent reports have suggested that the rate of return to sport cannot match the success of the type of surgery. Nevertheless, this is due to other factors [5,6,7,8,9,10,11,12,13], where this discrepancy raises many questions. The criterion used to be a good excessive and accelerated rehabilitative program followed by a professional therapist. However, there are criteria used for measuring outcomes of treatment other than the recovery time of sport. Indeed, determining the criteria till date remains a real challenge, either for the athletes or the therapists themselves.

Hence, what is the return to sport? This remains one of the most fundamental questions that have been asked.

Furthermore, numerous authors have studied, analyzed, and focused on certain criteria. Others were associated with multiple variables influencing the return to the field such as the strength of the quadriceps and hamstrings [14,15,16,17,18], the difference in symmetry between the members [19], the association measures of the knee (ROM, quadriceps strength, and functional performance tests), and the patient's psychological state[20]. It is also important to clarify whether the return to training or competition will be with the same degree of competition before injury. In this study, we tried to summarize the criteria for a return to the field in full security. Thus, this is to a level equal to the one existing before the break.

Subsequently, this is based on the fact that this return requires the interaction of several variables and no variable cannot be overlooked.

### **Search Strategy**

The Electronic Databases through which we started our research include PubMed, Medline, Embase, and Cochrane Database. These databases were searched in order to find the most recent articles criteria for return to sport after ACL reconstruction.

The keywords used for each search engine were: knee, ACL reconstruction, return to sport, functional performance testing, knee function, knee injuries, hop testing, outcomes Measures, rehabilitation, kinesiophobia, self-Reported Measures, leg spring stiffness, and sledge apparent strength. In this research, we chose 10 items, of which nine of them was published the last five years (from 2010 to 2015). Through working on the items, we found the opinion of several authors that attracted us to have an idea about the products which they have taken. We have cited the information that interest us specifying the reference sites of each of them (the author's).

### **Criteria for Selection**

The inclusion criteria's for the selected articles were: (1) Patients undergoing primary unilateral ACL reconstruction; (2) patients injury surgery time of at least 12 months; (3) people involved in sports activities related to the RACL; (4) patient in a sport before the accident; (5) complete patient rehabilitation program and those allowed to return to top-level sport; (6) patients who reported at least one measurement of quadriceps strength, symmetry of the members, and the psychological state; (7) The return to sport was identified by subjective measures or action to identify the level of sports participation of patients; and (8) any relationship analysis between the measures and the return to sport.

On the other hand, the exclusion criteria include: (1) Bilateral injury; (2) relapse history on the knee after RACL; (3) concurrent ligament injuries; (4) symptomatic meniscal lesions; (5) damage or repairs cartilage concomitant joint with RACL; (5) fractures; (6) injury or previous surgery of the hip and knee; and (7) inability to support the significant weight or lameness.

## Table of Results

Author's Name	Level of Evidence	Protocol	Measurement Scales	Results
Sylvia Czuppon	Systematic review	Analyse and summarize 16 Articles of literature by presenting the various disorders of the knee associated with return to sport after RLCA.	<ul style="list-style-type: none"> <li>• LSI of quadriceps</li> <li>• Single leg hop test</li> <li>• Marx activity score</li> <li>• IKDC</li> <li>• Lysholm score</li> <li>• Tampa scale of kinesiophobia</li> <li>• Psychovitality questionnaire</li> <li>• Knee self efficacy scale</li> <li>• Shortened profile of mood states</li> <li>• Pain catastrophizing scale</li> <li>• Emotional responses of athlete to injury questionnaire.</li> </ul>	There is only weak evidence to support the association between disorders of the knee, functional variables, and psychological as well as return to sports.
Stéphanie Di Stazi	Systematic review	Contribution evidence regarding the factors related to the second ACL injury and their link with previous neuromuscular deficiencies, with the proposed intervention method.	<ul style="list-style-type: none"> <li>• Drop jump landing, Drop vertical jump, Trunk repositioning, kneeling sudden force release, and Sport related jumping task.</li> <li>• Single leg hop and timed 6-meter hop tests</li> <li>• IKD 2000</li> <li>• Crossover test</li> </ul>	Targeted interventions against the deficiencies of movements associated with effective rehabilitation programs (long term), reduce the risk of relapse, restore performance and improve the ability to maintain ADL (daily life activities) without symptoms disabling the knee.
	Randomized clinical trial	<ul style="list-style-type: none"> <li>• 40 randomly distributed. Noncopers were divided into two groups at 10 rehabilitation sessions before surgery. The first group achieved progressive strength exercises of the quadriceps, while the second group had training related to disturbances strength exercises.</li> <li>• The same</li> </ul>		

Erin H. Hartigan		<p>rehabilitation was made post-operatively for the 2 groups.</p> <ul style="list-style-type: none"> <li>Given a quadriceps strength of 4 hop index score, the two self administered questionnaires were administered preoperatively. Also, it was administered postoperatively at 3, 6, and 12 months.</li> </ul>	<ul style="list-style-type: none"> <li>Mann Whitney</li> <li>1RM Testing</li> <li>KinCom</li> </ul>	It must need further rehabilitation in Noncopers to pass back to sport criteria.
A. Kobayashi	Transversal study	Study of the isokinetic quadriceps strength in 36 athletes during the concentric contraction (60 and 180 degrees for 12 to 24 months).	<ul style="list-style-type: none"> <li>Biodex dynamometer</li> <li>8 Peak torque</li> </ul>	The quadriceps strength is restored over time (88% to 180 degrees for 12 months, and 91% at 24 months). However, its performance is favorably cured after returning to the sport.
David Logerstedt	Cohort study	<ul style="list-style-type: none"> <li>Study conducted on 120 patients undergoing RACL.</li> <li>Tests performed preoperatively and in six months after RACL.</li> <li>Regression analysis to identify the self reported knee function in normal amplitudes.</li> </ul>	<ul style="list-style-type: none"> <li>IKDC 2000</li> <li>4 single legged hop test</li> </ul>	The legged hop singles postoperative tests can predict the success or failure of the results and the knee function, but cannot predict the preoperative function.
Trevor A. Lentz	Transversal study	<p>Study was performed on 84 patients who underwent RACL. They were divided into two groups:</p> <ul style="list-style-type: none"> <li>♣ Yes: return to the sport,</li> <li>♣ No: return to sports.</li> </ul> <p>Depending on their response, they were asked if they have returned to the same level existing prior to the wound.</p>	<ul style="list-style-type: none"> <li>Knee Effusion</li> <li>Knee ROM</li> <li>KT 1000</li> <li>Isokinetic dynamomètre (biodex)</li> <li>Self report questionnaire</li> </ul>	The most associated factors with the return to the sport are episodes of instability, effusion of the knee, and self reported function of the latter.

<p>Eamonn P. Flanagan</p>	<p>Transversal study</p>	<ul style="list-style-type: none"> <li>• Study conducted on 20 subjects rehabilitated.</li> <li>• Evaluation of the symmetry between members.</li> <li>• Study of the production capacity and strength reactivity.</li> </ul>	<ul style="list-style-type: none"> <li>• IKDC</li> <li>• Single leg hop for distance</li> <li>• Sledge machine</li> <li>• Six meter timed hop</li> </ul>	<p>Subjects with symmetry between the members after ACL restored production capacity and strength reactivity.</p>
<p>Gregory D. Myer</p>	<p>Case-control study</p>	<ul style="list-style-type: none"> <li>• 2 groups composed of 33 patients who underwent RACL and 67 healthy subjects.</li> <li>• Analysis of difference in symmetry between the members by:             <ul style="list-style-type: none"> <li>♣ Measure of production and force absorption for each member.</li> <li>♣ Measurement of anteroposterior movement of the tibia relative to the femur.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Single legged vertical hop</li> <li>• Maximum vertical ground reaction</li> <li>• Complete knee arthrometre</li> </ul>	<p>A unilateral deficit on the development and absorption strength persists after RLCA. Thus, it causes an asymmetry between the members, which consequently affects their performance.</p>
<p>Laura C. Schmitt</p>	<p>Transversal study</p>	<ul style="list-style-type: none"> <li>• 2 groups: 55 patients who underwent RACL, and a control group of 35 subjects.</li> <li>• Patients in the RACL group were divided into:             <ul style="list-style-type: none"> <li>♣ QI Group &gt; 90%</li> <li>♣ Group IQ &lt; 85%</li> <li>• Measure the function of each group.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Biodex Medical</li> <li>• Systems IKDC</li> <li>• 6m Timed Hop</li> <li>• KOOS</li> <li>• Single hop for distance</li> <li>• Triple hop for distance</li> <li>• Triple cross over hop for distance</li> </ul>	<p>The indices of symmetry with a force of less than 10% quadriceps showed a similar functional performance than those not injured.</p>
<p>Doo Hwan Kong</p>	<p>Transversal study</p>	<ul style="list-style-type: none"> <li>• 60 topics were divided into 2 groups: 30 who underwent RACL and 30 which is healthy and similar in terms of age and activity level.</li> <li>• Taking subjective/objective measures,</li> <li>• Realization of functional tests on the two (2) groups</li> <li>• Retest performed after 2 weeks.</li> </ul>	<ul style="list-style-type: none"> <li>• Lyshlom score</li> <li>• Tegner activity</li> <li>• Score KT 2000</li> <li>• Arthrometre isosinetic</li> <li>• Strength test</li> <li>• One leg hop test</li> <li>• Co-contraction test</li> <li>• Shuttle run test</li> <li>• Carioca test.</li> </ul>	<p>The performance of functional tests (Co-contraction carioca test, shuttle run test) showed a correlation with the established methods for determining the return to sport after RACL. Therefore, it had high test-retest reliability.</p>

## **Discussion**

The aim of the reconstruction of the anterior cross ligament (RACL) according to **Sylvia Czuppon** cannot be completed without the recovery of muscle strength. Even if the knee has good stability and sufficient range of motion[21], the strength of the quadriceps and hamstrings are considered the most objective criteria used to determine the possibility of return to sport [14,15,16,17,18]. Consequently, other authors have integrated quadriceps strengthening exercises preoperatively. Among them, **Erin H. Hartigan** has shown that it takes an additional rehabilitation in non-coopers to pass the criteria of return to sport which also affects the business results. Therefore, this was until he found that intensive inclusion in the preoperative and postoperative exercise in progressive quadriceps strengthening protocol gives favorable results. Likewise, the University of Delaware followed clinical milestones which indicates that a walking program/jogging dependent quadriceps strength, pain, and effusion should begin two months after the RACL[22].

However, the weakness of the quadriceps is still better than years of surgery, after RLCA performance improved over time [23,24]. This was stated by **A. Kobayashi** which showed that quadriceps strength is restored over time (88% at 12 months and 91% at 24 months) and its performance is favorably cured after returning to the sport[25].

**Laura C. Schmitt** agrees with the importance of the influence of the symmetry of the quadriceps on performance and therefore the return to sport. Based on single leg hop tests (the single hop for distance, the triple hop for distance, the triple crossover hop for distance, and the six meter timed hop), it showed that patients with a higher IQ or equal to 90% (less than 10% deficit) and an LSI quadriceps equivalent to 80-90% compared to the opposite side has a similar performance as the non-injured patients[26]. According to **Stephanie DI Stasi**, athletes who were recovering from RACL should not be considered to be wholly and purely rehabilitated in the absence of symmetry. The persistence of asymmetry present a risk for the occurrence of a second ACL injury. As against its restoration, it not only leads to maximizing its functional performance, but also mitigate the risk of a new injury[2]. Then, it is commonly suggested that such asymmetries should be resolved prior to initiation sports [27,28,29].

With regard to the development and absorption force, **Gregory D. Myer** also found a significant relationship between the latter and the symmetry. As asymmetry affects the development and absorption of force, it also affects its performance [19]. This difference in symmetry between members, was perceived as the Single vertical legged hop test which was performed on a member of unilateral deficit. What was stated by **Eamonn Flanagan P** after testing the symmetry between the members using the single

leg hop for distance, six meter timed hop, and the subjective IKDC form (Sledge capacity measured by the device), obtained high scores. However, he confirmed that participants who had a symmetry between the members after RACL, restored production capacity and strength reactivity. He also concluded that the symmetry of functional performance between the members after RACL is necessary to have a production capacity and strength of responsiveness[30].

Previous studies have reported conflicting results regarding the influence of the performance of the quadriceps on functional outcomes. This inconsistency appears to be closely linked to the method by which the performance of the quadriceps was measured. Therefore, this may be related to the study results [31,32,33,34]. In addition, it can also be influenced by the variability of the rehabilitation programs.

**Trevor A. Lentz** reported that the maximum torque of the quadriceps, the surgical side, normalized to body weight status differs between groups that are returning to the sport. However, the Symmetry Index of the quadriceps does not differ between these groups. The results of this study indicate that, despite the fact that the strength of the quadriceps is normalized, the body weight may be an important consideration in determining the ability of returning to sports. The asymmetry of quadriceps strength did not constitute a discriminating factor. However, the importance of symmetry of the quadriceps and the risk of relapse should not be overlooked.

With regard to the measurement methods of symmetry, the tests were varied. **David Logerstedt** found that singles legged hop tests identify asymmetry members after RACL. He also found that they are predictive of the self-report of the function of the knee measured by postoperative IKDC 2000. Furthermore, they also predict the success or failure of the results, but cannot predict the preoperative based[35]. Some studies seeking to determine whether the functional tests designed to identify the symmetry of the lower limbs are reliable, have found that unilateral hopping tasks (Broad jump and Vertical jump, double Modified limb performance testing, the crossover hop for distance, Triple hop test for distance, and Six meter timed hop) can identify non-obvious unilateral performance deficits during bipodal performance[3].

**Doo Hwan Kong** has clear advantage on the effectiveness of performance testing. To validate these tests, he used the one leg hop test, the test Co-contraction, the shuttle run test and the Carioca test, to evaluate the performance necessary to return to the sport after RACL. Thus, he conducted an evaluation of the test-retest reliability of these tests in a healthy group and a group that undergoes RACL. The results showed a correlation with the established methods for determining the return to sport after RACL with a

high test-retest reliability. Furthermore, he concluded that they can be used to assess knee function to return to the field[4]. But some authors came to upset what has been mentioned above; and they considered the relationship between the functional test of performance of the athlete to be badly established[36].

By cons, **Trevor A. Lentz** has shown that episodes of instability, effusion of the knee, and postponed auto function are the factors that differs between groups of individuals returning to the sport. Therefore, more than half of the patients through which the study was conducted, were respondents to self-report questionnaires. Also, athletes have to return to the same level of sport that existed before the injury. This is accompanied by less effusion, fewer episodes of instability quadriceps, less pain, and a lower level of kinesiophobia [22,32,37,38,39,40,41]. However, all these factors are potentially modifiable and should be considered when developing guidelines back to the sport and the participation criteria following ACL reconstruction [22].

Finally, studies have shown that the function of the knee is associated with the fear of movement re-injury [6,42,43,44,45,46]. Some patients without disorders ROM or strength or other knee disorders can choose not to return to the existing level of activity before the injury. This is due to reasons unrelated to the function of the knee such as the change of their lifestyle. Unlike other patients, they have knee disorders after RACL return to the competitive sport[47]. However, the psychological variables may partly explain the lack of association between physical function and return to sports [46,47,48].

Fear of movement and new break (kinesiophobia) is one of the reasons patients do not return to the sport. Although kinesiophobia decreases during rehabilitation, it remains present in more than 20-24% of patients[11,49]. Despite these reports, psychological measures are not typically used in the criteria to return to the sport after RACL. After examining other opinions and studies, we considered the strength of the quadriceps as the main criterion for the return to sport [14,15,16,17,18,19,20]. Furthermore, it is known as the most sought muscle during sports activities. It undergoes extensive alteration during surgery. For this reason, he needs significant time to recover his strength [14,15,16,17,18,19,20]. Hence, completing an LSI quadriceps equivalent to 90% compared to the opposite side is a sufficient evidence to allow athletes to return to sport with security[14,15,16,17,50]. Thus, this is against other deficits which are recovered generally after returning to the sport [25]. Although muscle strength is considered as the main criterion to return to the sport, other variables are not neglected due to their influence on athletes and their return to sport.

After a good read of the articles which is present at our disposal, we found that the symmetry between members is also a very important criterion for the return to the field after RACL. However, it view his influence on functional performance, and the necessity to have a capacity of productive and reactive force [19,30,51]. Indeed, an IQ equal to 90% ensures symmetry, and the athlete will therefore be able to return to his activities [51]. As regards the measure of symmetry, the use of functional tests to assess the performance is paramount, and the hop test proves to be effective [35]. The singles legged hop tests can predict the success or failure of the results, while unilateral hopping unilateral tasks can identify the performance gaps which is not obvious during the performance bipodales [3]. The ideal would be to use one leg hop test, the test Co-contraction, the shuttle run test, and the test after which carioaca Re-test shows good reliability[4].

In addition, we also talked about kinesiophobia which is defined as the fear of movement. It scares the athlete to return to his sport activity for fear of the occurrence of re-injury and in re-experiencing the pain he had once experienced. Hence, it is important to treat kinesiophobia because it can hinder and avoid a return to the sport, even after recovering the strength of the knee and solving all of its problems[47].

Other than the symmetry and kinesiophobia, there is effusion, pain, and the instability of the knee. The effusion and knee pain which are part of the immediate complications of surgery, are treated by the first week's icings, punctures, which is associated with drug treatments. For that, they must not be regarded as a criteria of return to sport since it requires at least 9 months.

Through cons stability, it is important to ensure a safe return and avoid further injury[1]. Indeed, the quadriceps is one of the main causes of knee stability, which brings us back to the original idea on the importance of the recovery of quadriceps: "Completing the requested quadriceps strength leads to complete knee instability".

## **Conclusion**

The return to sport is a concern accompanying the athlete from the moment he agrees to undergo the reconstruction of the anterior cruciate ligament (RACL). This occurs especially when it comes to high-level athletes. This concern is related to social reasons, especially the celebrity who may be affected and altered during the period of absence of the athlete of the land. However, this influences its future as an athlete. Indeed, the decision to return to the sport depends primarily on the state that the quadriceps have lost his strength following the surgery. The quadriceps is the key of the relationship between instability, and the symmetry between the members and performance. Therefore, it is a basic element. So when the

force required of the quadriceps is reached, the knee stability which is the symmetry between the members and its performance are reached too at the same time. Thus, this result in the return to sport. An IQ equal to 90%, and consequently an LSI equal to 90% equivalent to the opposite side, is considered to be the criterion which enables the above relation based on the required performance. In order to assert the latter, multiple functional performance tests were used. Among them, four have shown good reliability which include: One leg hop test, the test Co-contraction, the shuttle run test, and the Carioca test.

Although the functional status of the athlete is important to return to the sport, the psychological status must not be overlooked. Hence, kinesiophobia, in other words the fear of movement, is considered a criterion for influencing the return to the field. It must be taken into consideration and should be supported by all members of the team. This should begin from the doctor to the therapist's coach, and then the family and anyone who can be able to influence them.

Finally, a patient with the right quadriceps strength [IQ = 90%] and a motivating psychological status, is considered as the criteria for ensuring participation in sport and enabling a reduction in the rate of re-injury or injury on the side which is contralateral.

### **Recommendation**

During our work, we have seen that the majority of articles have talked about the various functional tests and the ways of their realization. However, none of them did talk about the physiological effects that resulted at that time. We also noticed that there are no strict studies that consider kinesiophobia as a criterion even though it does not lack importance to the other criteria mentioned. Subsequently, we hereby recommend:

- To prepare studies identifying the physiological effect of functional tests realized.
- To consider the advantage of kinesiophobia that should not be underestimated in athletes who undergoes RACL.

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# **SUSTAINABILITY FACTORS OF SCIENCE PARKS AND RESEARCH CENTRES IN RELATION TO REDUCING IMBALANCE IN EUROPEAN RESEARCH AREA**

*Branislav Hadzima, Assoc. Prof.*

*Stefan Sedivy, PhD*

*Lubomir Pepucha, PhD*

University of Zilina, Research Centre, Slovakia

*Zuziakova Ingrid, MSc.*

University of Zilina, Faculty of Civil Engineering, Slovakia

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## **Abstract**

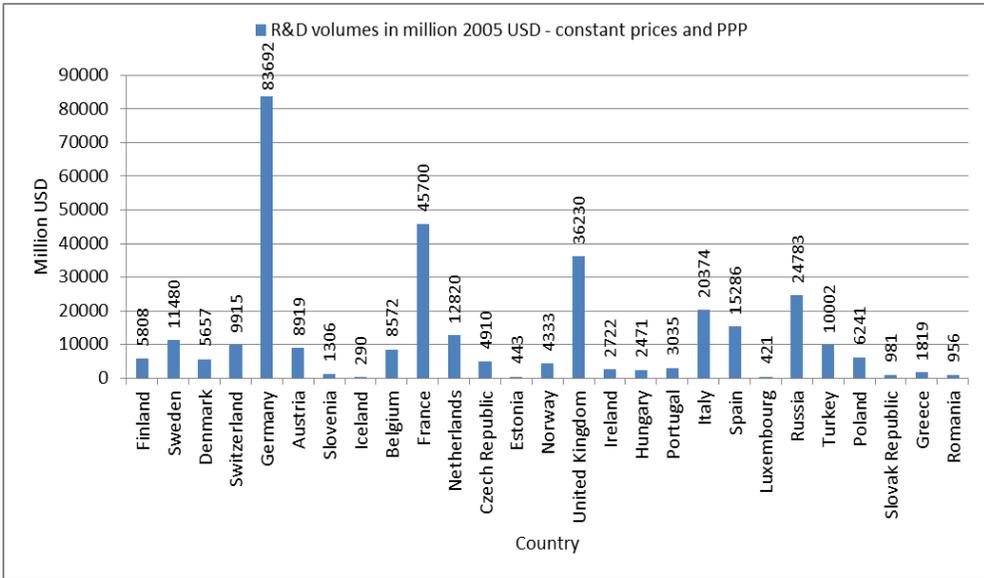
Direct application of research centres operational models for their sustainability after the financial support from structural funds ends (e.g. after 2015) represents important issue for their managers. How to implement said models cause enormous discussions well ahead of its time. Time lead of such discussion shows that the issue is not really solved. It is necessary to connect sustainability assurance with an active approach to the actual and predictor risk by following the most important goal – reducing imbalance within European research area while ensuring all-society contribution.

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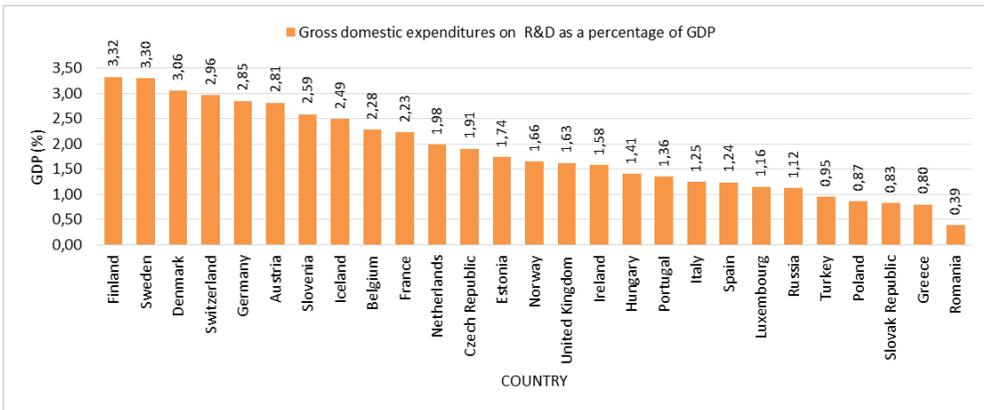
**Keywords:** Research Centre, University of Zilina, sustainability, risks, imbalance

## **Imbalance in european research area**

Countries in Europe pay research and development (R&D) different amount of attention. Some consider it very important part of their economy and allocate appropriate support. Governments can show different forms of support – direct or indirect. Direct support is usually financial in form of percentage from gross domestic product (GDP). Indirect support can be in forms of tax reductions for R&D projects/ grants, support for creating new research positions, government contracts, etc. Percentage of GDP spent on R&D in Europe in 2013 is shown in graph 1.



Graph 1 Percentage of GDP spent on R&D in European countries in 2013  
 (Source: Research and Development Statistics (RDS), OECD, [www.oecd.org/sti/rds](http://www.oecd.org/sti/rds), accessed April 2015)



Graph 2 Spending on R&D in million USD in Europe in 2013  
 (Source: Compiled from “Gross domestic expenditure on R-D by sector of performance and source of funds”, OECD.StatExtracts, [http://stats.oecd.org/Index.aspx?DataSetCode=GERD\\_FUNDS](http://stats.oecd.org/Index.aspx?DataSetCode=GERD_FUNDS), accessed April 2015)

For comparison is in second graph shown equal information in millions of 2005 US dollars. These two graphs clearly show the baseline for imbalance in European research area. Highest contributors are Scandinavian countries, Switzerland and Germany. Slovak republic devoted less than 1% of its 2013 GDP to research activities (only 981 million USD). Private funding is still lacking as well as academic and private sector cooperation. It

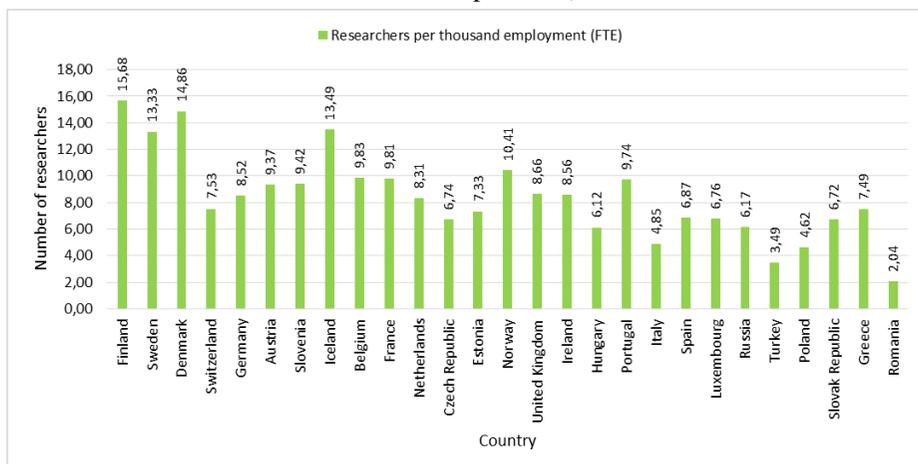
is no wonder then that Slovak R&D is at the bottom of the European research excellence list. Germany, for comparison, put 2.85 % of their 2013 GDP (almost 84 million USD) and they are leader in various scientific areas.

Leaders in R&D don't rely only on government funding. Also models for close cooperation of academic sphere with praxis are common. Slovak Republic rely almost solely on structural funds, there are missing managerial models for industrial grants and cooperation with praxis is only in its beginning. Moreover, with structural funds comes great amount of bureaucracy. All of the spending must go through public procurement which is very long and complicated process. It usually takes months to conduct a public procurement and even after that, procurers have to wait another few months for approval from controlling body. That means that sometimes it takes more than a year to buy necessary equipment on which the research is to be conducted. In order to ease the process of reducing imbalance and ensuring sustainability, simpler legislation must be implemented. Also new platforms for industrial grants must be developed and cooperation between academic and private sector must be enhanced.

Another point of view shows how many human resources are devoted to research although quality must be taken into consideration as well. Graph 3 shows how many of thousand employees were researchers throughout Europe in 2013. Scandinavian countries (as highest percentage of GDP as well) including Iceland employ the highest number of researchers.

Graph 3 Number of researchers per 1000 employees in Europe in 2013

(Source: Research and Development Statistics (RDS), OECD, [www.oecd.org/sti/rds](http://www.oecd.org/sti/rds), accessed April 2015)



In order to reduce imbalance European Union introduced structural funding through various operational programs. These were aimed at every aspect, not only R&D. Thanks to Operational Programme Research and

Development, more than 410 million € was allocated to Slovakia to fund creation of 13 university science parks and research centres (USP and RC). They are aimed to create excellent background for research activities in academic and academic collaborating with private sector. For them to be able to fulfil their goal sustainability must be assured and risk management must be implemented.

### **What is the research centre of the university of žilina?**

One of newly created centres is Research Centre of the University of Žilina (Research Centre; RC ZU). After its completion it will be a unique workplace for research and development established by the University of Žilina. Its function is to operate as a regional centre of applied research integrating decisive research activities and thus reaching synergistic effect in application and increase of research potential of the University of Žilina. At the same time the prime social commitment will be assured, which is the research implementation with direct impact on everyday life. Research centre aims to conduct research for people. For fulfilling this message and function, it connects activities of several science-and-research working units. It involves the 5 crucial faculties of the University of Žilina, 13 departments and institutions included. There is also a strong connection to industrial partner – Transportation Research Institute, which with its 60-years history represents one of the crucial elements in frame of private activities in chosen segments of transport research.

Crucial activities can be described as follows:

- Research and development in the area of control and evaluation of transportation infrastructure condition.
- Research and development in the area of progressive materials for building the transport infrastructure and production of the means of transport.
- Research and development in the area of design, construction and control of intelligent buildings and renewable energy sources.

Research Centre of the University of Žilina also supports clever people with good ideas and is building its own incubator for spin-off and start-up projects. This enables a simpler and much faster commercialization of research results and developments; an active look-up for potential spin-off and start-up projects as well as it supports the creation of new innovative business companies.

Another part of Research Centre, Regional Centre for Knowledge and Technology Transfer and Science Popularization is engaged in popularization of research results in laic and professional community. Its aim is to acquire customers for research and development activities at national and international level, to identify potential application of the results reached

in research and development, to enhance their transfer to praxis and to build up the system for effective commercialization of reached results. There is also a department for dealing with regulation and active protection of spiritual property in relation to actual output.

### **Sustainability = demand**

Every subject not managed by adequate grant (either on regional, national or higher level) has to come up with additional means of funding to become self-sufficient for operation and further development. Financial mechanism for newly created university science parks and research centres is based primarily on idea of zero or minimal dependency on founder (universities or Slovak academy of sciences). Based on these premises, question of sustainability is much more than relevant.

The basic element of sustainability is demand for ones services and products, which directly influences viability and determinates the role of the subject in frame of research-and-development as well as all-society environment. Although we primary consider the demand in relation to its satisfaction from the point of view of financial incomes for relevant research-and-development subject, the social demand occurs more and more often, which we can define for example by:

- Interest to cooperate from top-level professionals,
- Need of existence of such subjects that are able to efficiently interlinks educational and research activities in academic area or
- In the form of all-society commissions that do not generate financial income and do not thus contribute to direct financial sustainability of existing subjects.

When the forms of demand are known, it is possible to start focusing on relevant risk factors and to create tools to regulate them.

### **Risk factors from the rc zu point of view**

Risks in relation to specific organizations of research and development such as USP and RC can be divided into 2 basic groups: general and specific.

General risks represent a group of circumstances, which influence the very existence, operational capability, financial independence and competitiveness of all subjects (all newly created USP and RC) without exception. We can include here:

- existence of national forms of support for USP and RC (direct grants and stimuli),
- legislative and programme barriers and arrangements disabling an active entry into the economic market conditions,

- all-society attitude to further support for USP and RC in relation to the state and prediction of development of national and European economics. Specific risks are unique influencing factors related individually to each one of USP and RC. It is a group of factors that arise for example from:
  - Reallocation of research-development capacities in the frame of professional fixation and relevant region (amount and quality of competitive subjects),
  - Existence of mid-term and long-term demand partners (regular customers),
  - Access to high-quality supraregional basis of human resources,
  - Efficiency of using own unique infrastructure,
  - Possibilities for active and stable binding to important research organizations on international level and engaging in common activities of R&D,
  - Efficiency of integrating other R&D subjects under its own regulation.
  - Range and quality of actual activities aiming to financial sustainability (indirect grant schemes for USP and RC, for example Slovak Research and Development Agency, local grants and amount of irregular income, for example in form of contractual research), including the questions of founding and operating the start-ups and spin-offs.

It is necessary to mention here that even though both risk groups act externally as separate factors on USP and RC projects' sustainability, it is not possible or right to compare their importance, separate them completely from each other and approach them without solving the secondary risks caused by them.

### **Control of General Risks by RC ZU**

It is not possible to create and apply tools for managing general risks by an individual subject like RC ZU, considering the volume and character of the factors entering their development process. From the projects' sustainability point of view, USP and RC identify the primary problem as the missing definition of any further support from initiating subject (in this case the Ministry of Education). There is a serious assumption that after the 2013-2015 period (period with financial support from initiating subject), a new period will follow where USP and RC will have to redirect from activities for stabilization in economic environment and demand base creation to „lifesaving activities“. It is highly possible that some of USP and RC will not be able to find sufficient tools to survive until the new supporting systems are defined and will have to cease to exist or will need considerable help from founder institutions. Then the questions of efficiency of investing the

financial resources for their creation occur, which will logically cause scepticism for future support.

USP and RC also have to directly confront legislative and programme barriers. These on one hand „dictate“ duties in form of activities for its sustainability, but on the other hand they limit the forms of financial support in the frame of monitored period (by the year 2020) to minimum and thus limit the possibilities of equalization with market subjects. The sooner suitable legislative precautions come, not just in form of internal (institutional regulations of the University of Žilina) and national legislation, but mainly on the part of programme adaptation (Operational Programme Research and Development and Operational Programme Research and Innovation), the sooner it will be possible to find an optimal model of its own functioning in relation to the question of sustainability.

The last mentioned general risk is the amount of public acceptance of ongoing and future support for USP and RC projects considering the economic situation and direct impact of actual R&D activities for public benefit. This risk factor is generated through the whole society and even though it acts externally like some unimportant factor of sustainability, when considered in detail its role is extremely important. The reason is its ability to accelerate or completely stop the sustainability of these projects. Considering creation of 14 USP and RC subjects, there were more than 400 million € allocated for the 2013-2015 period. This amount represents an extreme expense for economy and a massive obligation to final recipients of services and products of actual R&D activities (the society), while their amount and quality is directly transformed in form of feedback into one of the indicators reflecting the need of sustainability of USP and RC. In case that society will not create demand for provided products and services, it will be necessary to reconsider tools applied for preserving sustainability and to redirect financial help to other economy sectors outside research and development. From the economic contribution point of view, it is possible to discuss the subject of USP and RC sustainability and their influence on economy, while declaring that R&D sector contributed to economic growth. Thus the expended financial means will prove to create benefits (both financial profits and social benefits) and a direct motivator to provide tools for preserving sustainability of USP and RC in future period will occur.

### **Managing Specific (Individual) Risks of RC ZU**

This group of risks is characteristic by quite open possibilities of direct risk management by applying the right tools at the right time.

The idea of RC ZU was drafted in form of a subject that disposes of certain elements of uniqueness and competitiveness in order to simplify implementation of sustainability tools. Areas of research and development

originate from historic background so they are focused on transportation and related topics. The University of Žilina as the founding institution profiles itself in a long-term horizon as a centre of transportation research in Slovakia, with stable position in European area. RC ZU project realization contributes to this profiling.

Meanwhile the competitive advantage occurs in form of favourable regional and supraregional localization in comparison to other research-and-development subjects, that could directly threaten (or weaken) demand for RC ZU's services and products completed with very specific acquired and used infrastructure.

Great deal of attention according to RC ZU management model is dedicated to activities concerning acquiring and preserving the strong partnerships with demand entities from industry or society (including the environment providing educational process). With industrial partners it means to conduct such research activities that are interesting for their own applicability into praxis. Reaching this goal will help not only to create higher level of demand from said partners but will also lead to much required financial stability for further innovations and operation. One of the examples is signing several general contracts of cooperation even before finishing the actual building of RC ZU own research facility.

In second case, where the attention is concerned with society interests, the goal of RC ZU is to transform its own activities into the form that brings direct effect to society, for example connecting research activities with educational process. Direct use of gained knowledge is meant here, in frame of actual R&D activities included into educational process, mainly at the University of Žilina.

Another decisive element that directly influences the RC ZU sustainability is ensuring the available basis of employees who dispose of relevant professional and managerial abilities. That is the reason why we approach creation of research teams in a highly professional manner, choosing people by committees, while the innovation and competitiveness of approach of the person is emphasised. This system is partly supported by strengthening the teams with post docs. Right now there are taken steps to integrate the students of bachelor and engineering degrees into the actual research-and-development process of RC ZU as well. The goal is not just to enhance their knowledge basis but also to determine their innovation potential.

A clear, well established system greatly eliminates personal risks and uniquely determinates the position and duties of each member of research groups and managerial teams, which reflects itself in efficiency of decisive and specific R&D activities.

Research-and-development environment is quite often confronted with insufficient level of using one's own infrastructure. This level is mainly influenced by the correct prediction of demanded services and products in combination with operational costs and personal capacities needed for the direct R&D activities. When the idea of RC ZU was forming, the emphasis has been put on unique equipment, thus preventing the impact of aforementioned risk. At the same time, modularity and compatibility of some parts of infrastructure have been taken into consideration. It means the efficiency in cooperation with already existing infrastructure of University of Žilina, especially already existing excellence centres of research and development and the ones that the RC ZU will probably cover in the future. Even in spite of the system adaptation, the risk is connected mainly with preserving its operational ability after completing the direct funding schemes and possible growth of competitive subjects, which may dispose of similar equipment.

Strong institutional partner support from important research-and-development organizations in Slovakia as well as Europe creates preconditions for participating in common activities that bring important and wanted effects, including the financial gains. RC ZU integrates activities consisting of regulating such relations and makes an effort to increase their benefits for the needs of actual sustainability. It acts as an active partner for international initiatives like HORIZON 2020, COST, EEAGRANTS, Visegrad FUND or direct notices on the part of regional partners (Danube Region). At the same time it supports widening of researchers database by activities in the frame of Marie Curie models.

RC ZU also takes adequate steps in order to achieve financial sustainability. It mainly concerns of the active approach for receiving grants from Slovak Research and Development Agency, Research Grant Agency, subsidies from the Ministry of Economy SR, etc. At the same time it forms specific Regional Centre and Incubator, e.g. organizations that are supposed to help in an active way by gaining customers, protecting and spreading intellectual property and support the innovative ideas in form of spin-off projects.

## **Conclusion**

Due to various economic and historical developments, substantial imbalance of European countries was developed. One of EU goals is to reduce it by channelling its help and assistance to those countries, which struggle. Many programmes and projects were established and enormous amount of money were redistributed. In order to continue, sustainability must be secured. It is not possible to leave sustainability of such important and specific projects like USP and RC (with their huge infrastructure and

personnel) up just to themselves. Not even in spite of ambition to apply such managerial models that aim mainly for financial stability in mid-term and long-term horizon without being dependent on other forms of direct or indirect support (grants, subsidies, stimuli, etc.). This statement is based mainly on a short-time period needed for building the USP and RC facilities as well as implementing specific research-and-development activities, where the elements of unique services and products are formed and the position in frame of open market economy is stabilized.

It is necessary to realize that until given time period expires (the end of year 2015), there will be 14 unique research-and-development institutions in Slovakia, but most of them will be only in its initiatory stage. That means at a zero point or in its proximity. There is an assumption that without more of the direct support from the founding institutions, these new USP and RC projects will end in similar scenarios of development that happened in last seven years, when the excellence centres of research and development have been built from the infrastructural and personal aspect, while the need of their short-term sustainability was not reflected in implementation of specific stabilization activities at research and economy space. That has been transformed afterwards into undesirable pattern and one of the goals for newly established USP and RC is the use of their potential, which will directly contribute to increase their competitiveness and reduce imbalance in European research area.

It is possible to directly apply the aforementioned statements to Research Centre of the University of Žilina. The managerial model tries to approach each of the risks, which can influence the efforts to provide actual sustainability, in a way that establishes Žilina as a science city in mid-term to long-term horizon. An important precondition to reach this goal is following the basic pillars of success: to conduct a unique, specific research and development activities, to follow trends in demand and to conduct the research for society, the research for people.

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# PARAMETRIC ANALYSIS ON THE DESIGN OF RF MEMS SERIES SWITCHES

*Julio A. Lonac, Prof.*

*Gustavo A. Merletti, PhD student*

MicroLAB-RF-microwave and MEMS research center of the Universidad Nacional de San Martín, ECyT-UNSAM, Argentina

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## Abstract

A parametric analysis on the design of RF MEMS series switches is performed. The main design variables were identified and a set of RF MEMS series switches were designed, fabricated and measured. The effect of these design variables on the pull-in voltage ( $V_p$ ) and the RF performance of the switches is studied and simplified equations for design propose are evaluated and corrected on the basis of experimental results.

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**Keywords:** RF MEMS, Pull-in voltage, Cantilever beam, S-parameters

## Introduction

MEMS (Micro Mechanical-Electrical Systems) have experienced a rapid expansion in the last years finding application in many fields of electronics and mechanics. When it goes to radio frequency (RF) applications there are many examples of MEMS devices which found their way into the market. In particular the RF switches have become very successful RF MEMS devices and are broadly used. This fact can be attributed to the good electrical performance of this kind of switches which offer low power consume, high power handling, high linearity, good isolation, and very low insertion loss when compared with the semiconductor alternatives. Anyway not all are roses in the MEMS house, MEMS devices present also some weak points, especially when it goes to the switching time and reliability, but there are many applications where the switching time is not critical, and in recent years there have been done very big improvements on the reliability of MEMS (DeNatale,2003) (Malmqvist, 2010) (Becher, 2002).

There are two main kinds of RF MEMS switches, the shunt capacitive switch and the series switch which can be capacitive or resistive. The work principle of the shunt switch is based on capacitive filtering and thus its band is limited and it is more suitable for applications beyond the

5GHz. On the other hand the series switch in its resistive variant is essentially broadband and is suitable for both, high and low frequencies. There are many constructive variants of the series switch; the switches studied in this work correspond to the implementation presented in figure 1.

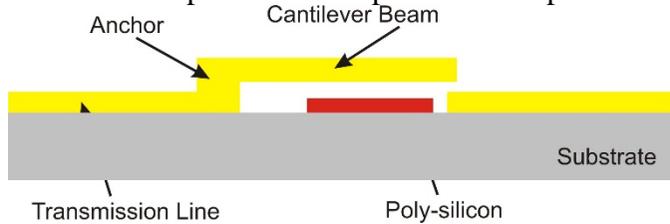


Figure 1. Cross section view of the designed RF MEMS series

The switch is formed by a CPW line which has a cantilever in its center. When no control voltage is applied the cantilever is suspended, there is not ohmic contact and only a very low value parasitic capacitance is formed between the input and the output of the switch, thus there is not signal transmission. When a control voltage is applied the cantilever bends providing ohmic contact and the switch is close.

The design of the MEMS switches is usually performed with the help of 3D electromagnetic and electro-mechanical simulation CADs. These simulations are usually quite time consuming and demand high computational resources. Even when simulations are almost mandatory for the design, the use of simplified design equations is also very valuable because they speeds up the design cycle since the time consuming simulations can be reduced to a minimum, and also give the designer the necessary insight and understanding of the problem for maximizing the performance and better achieve the design target. Thus the design equations should be that rare mix of accuracy and simplicity which allows getting a rather accurate first approach while been enough simple to give the designer the necessary insight for correctly understanding the effect and weight of the key design parameters.

The aim of this work was identifying the key dimensional parameters that should be taken into account when designing a RF MEMS series switch and some simplified design equations. These equations where used in the design of a set of RF MEMS switches. The switches were measured and the experimental data was used to validate and improve the accuracy of design equations.

### Switch design variables and equations

The key performance parameters for a RF MEMS include the Pull-in Voltage ( $V_p$ ), i.e. the minimum control voltage value necessary to move the switch from its natural position, the isolation (blocking state), the input and

output return loss (transmission state), and the insertion loss (transmission state). Since the switch is basically a CPW transmission line when it is closed, the return losses and the insertion loss will mainly depend on the characteristic impedance and the losses of the line which in turns depend on the gap ( $G$ ) and the width ( $W$ ), and the length (usually proportional to the length of the cantilever  $L$ ) respectively. On the other hand the  $V_p$  value depends on the actuation area (which is usually proportional to  $L$ ), the thickness of the cantilever ( $T$ ), the gap between the cantilever and the control contact ( $g$ ), and the length of the cantilever ( $L$ ). For a clearer view of the dimensional parameters please refer to figure 2.

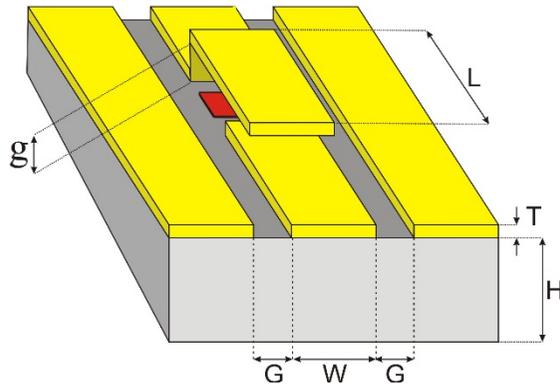


Figure 2. Key design variables for the RF MEMS series switch

Unfortunately, for some of these parameters, the choice is limited to a very narrow set of values fixed by the fabrication process technology. That is the case for example of the metallization thickness  $T$  and the cantilever gap  $g$ . On the other hand there is a bigger choice on the value of the dimensional parameters  $G$ ,  $W$  and  $L$ . Since  $G$  and  $W$  fix the characteristic impedance of the transmission line which forms the switch and decide on the return loss as well as on the insertion loss indirectly, then these values should be fixed on the basis of the electrical RF performance. Thus the main design parameter which can be varied relatively free in order to adjust the pull-in voltage is the cantilever length  $L$ . Anyway the  $L$  value will affect the size and the insertion loss of the switch and thus should be kept as small as possible.

In order to predict the pull-in voltage a relative simple equation is derived and proposed in (Rebeiz, 2003).

$$V_{pull-in} = \sqrt{\frac{8k}{27\epsilon_0 A}} g_0^3 \quad (1)$$

In the derivation of equation 1 it was assumed the cantilever is plane (constant  $g$ ) and has no curling due to residual stress introduced during the fabrication process. While this assumption is rather true in the case of a short

cantilever it becomes less accurate when the switch length increases because of stress induced deflection (Nishijima, 2004). Most of the times the residual stress introduced during the fabrication produce the curling of the cantilever (usually the value of  $g$  increase while moving through the free end of the cantilever), this effect is more evident for long cantilevers (small  $g/L$  ratio) and thus in such cases the equation 1 is less accurate. In order to correct equation 1 it would be necessary to take into account the  $g$  variation as a function of the cantilever length. The calculation of this curling profile based on the residual stress is not straight forward and requires simulation. Since it is desired to reduce the simulation effort a simplified approximation is needed. First it is not necessary to take into account for the complete curling profile, and applying the mean value theorem it should be enough to use some kind of mean value in order to correct the equation. Also since the standard deviation of the variations on the  $g$  value introduced, for a fixed  $L$ , by different processes is small compared with its mean value, if a correction is derived for a "typical" process on the basis of profile measurement, then this correction should be useful for other similar processes. Taking into account the former premises a corrective improvement for equation 1 is derived using the profile measurements ( $g_{max}$ ) corresponding to a typical MEMS process using Au/AuCr metallization (figure 3).

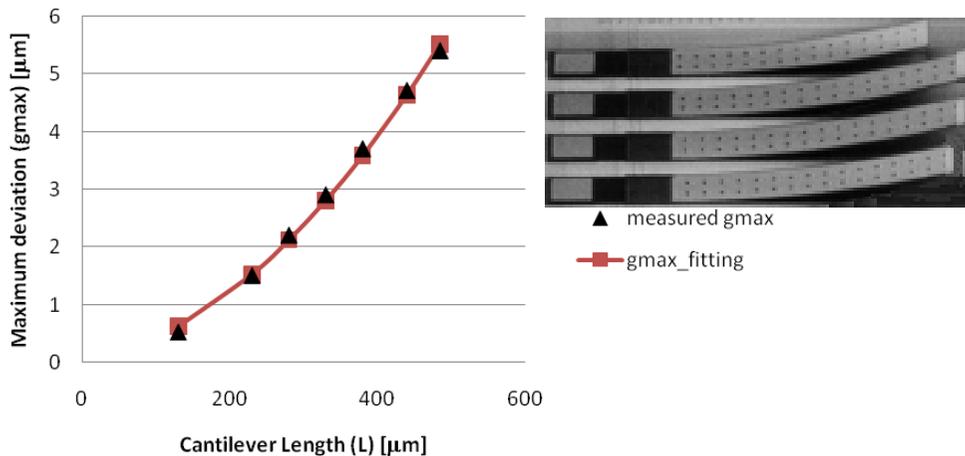


Figure 3. Comparison of the measured and calculated maximum cantilever deviation. Calculation was performed using the proposed second order polynomial fitting. SEM image of a set of test structures (on the top right corner).

A second order polynomial ( $g_{max\_fitting}$ ) is fitted to the measured profile curling data and an expression for the mean value of the  $g$  deviation is derived (eq.2).

$$g_{\max} = 18.5e - 6 \cdot L^2 + 0.025 \cdot L \quad (2)$$

Where  $g_{\max}$  is the maximum gap deviation at the free edge of the cantilever and  $L$  is the length of the cantilever in  $\mu\text{m}$ .

Then a simplified expression for the mean value of the  $g$  deviation ( $g_{\text{mean}}$ ) as a function of the maximum gap deviation ( $g_{\max}$ ) is derived (eq.3a).

$$g_{\text{mean}} = \frac{g_{\max}}{3} \quad (3a)$$

$$g' = g + \frac{g_{\max}}{3} \quad (3b)$$

Replacing the constant gap value used in equation 1 by the new corrected  $g'$  value (eq.3b) a new improved equation for the calculation of the pull-in voltage is obtained (eq.4)

$$V_{\text{pull-in}} = \sqrt{\frac{8k}{27\epsilon_0 A} \left( g_0 + \frac{18.5e - 6 \cdot L^2 + 0.025 \cdot L}{3} \right)^3} \quad (4)$$

As previously stated the value of the design variables  $W$  and  $G$  should be fixed in order to assure the desired RF performance for the switch. The RF MEMS series switch can be modeled using a CPW transmission line plus a parasitic inductance ( $L_s$ ) and a contact resistance ( $R_c$ ) (figure 4).

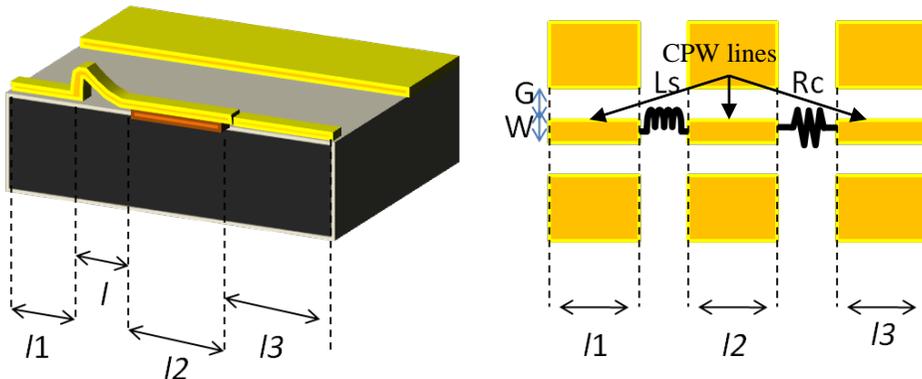


Figure 4. RF MEMS series switch cross section and its equivalent simplified model.

In order to minimize the losses, the switch should be matched to the impedance of the system ( $Z_0$ ) where it will be used ( $Z_0=50\Omega$  for most of the RF applications). Since the switch model is basically a CPW line, it will be enough matching its characteristic impedance to  $Z_0$ , this can be easily accomplished by inverting equation 5 (Kumar, 2012) for the determination of  $W$  and  $G$ .

$$Z_o = \frac{30\pi}{\sqrt{\frac{\epsilon_r+1}{2}}} \cdot \frac{K'(k)}{K(k)} \quad (5)$$

Where

$$k = \frac{W}{W+2G} \quad (6)$$

And

$$\frac{K'(k)}{K(k)} = \begin{cases} \frac{\pi}{\ln\left(\frac{2^{1+\sqrt{1-k^2}}}{1-\sqrt{1-k^2}}\right)} & \text{for } 0 \leq k \leq \frac{1}{\sqrt{2}} \\ \frac{\ln\left(\frac{2^{1+\sqrt{k}}}{1-\sqrt{k}}\right)}{\pi} & \text{for } \frac{1}{\sqrt{2}} \leq k \leq 1 \end{cases} \quad (7)$$

The contact resistance is a function of the contact area, the quality and material of the surface, the mechanical force applied. For most of the practical applications it can be assumed a value of  $R_c$  between  $0,5\Omega$  and  $1\Omega$  per contact area (Rebeiz, 2003), so choosing a value of  $0.75\Omega$  would be a good initial guess for the model. The parasitic inductance  $L_s$  is mostly due to the part of the cantilever which remains suspended in air when the switch is actuated, this part of the line will have a smaller capacitance per unit length because the line is suspended in air which has a lower permittivity than the MEMS's substrate, which means it will have a higher characteristic impedance ( $Z_b$ ) given by equation 8.

$$Z_b = Z_o \cdot \sqrt{\epsilon_r} \quad (8)$$

The short line can then be approximated with a lumped inductance  $L_s$  using equation 9 (Rebeiz, 2003).

$$L_s = \frac{Z_b \cdot l \cdot \sqrt{\epsilon_r}}{C_0} \quad (9)$$

A final expression for  $L_s$  is obtained by replacing eq.8 into eq.9.

$$L_s = \frac{Z_o \cdot l \cdot \epsilon_r}{C_0} \quad (10)$$

Where  $l$  is the length of line that remains suspended in air when the switch is activated, in the dielectric constant of the substrate,  $c_0$  is the speed of the light, and  $Z_o$  is the characteristic impedance of the system.

Having identified all the parameters of the simplified model, and related them to the key design variables it is now possible to determine the values of  $W$ ,  $G$  and  $L$  that suits the RF (return loss, insertion loss, etc) and DC (pull-in voltage) design specifications for the switch.

**Experimental results:**

A set of four RF MEMS series switches, with different cantilever lengths (200 $\mu\text{m}$ , 300 $\mu\text{m}$ , 400 $\mu\text{m}$ , and 500 $\mu\text{m}$  respectively, fig. 5) was designed, using the guidelines defined in section II, and fabricated.

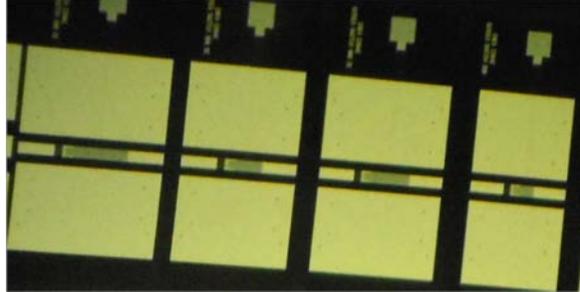


Figure 5. Fabricated switches with different cantilevers lengths (500 $\mu\text{m}$ , 300 $\mu\text{m}$ , 400 $\mu\text{m}$  and 200 $\mu\text{m}$  from left to right).

The switches were measured for both RF S-parameters and pull-in voltage performance. The measurement set up is presented in figure 6.

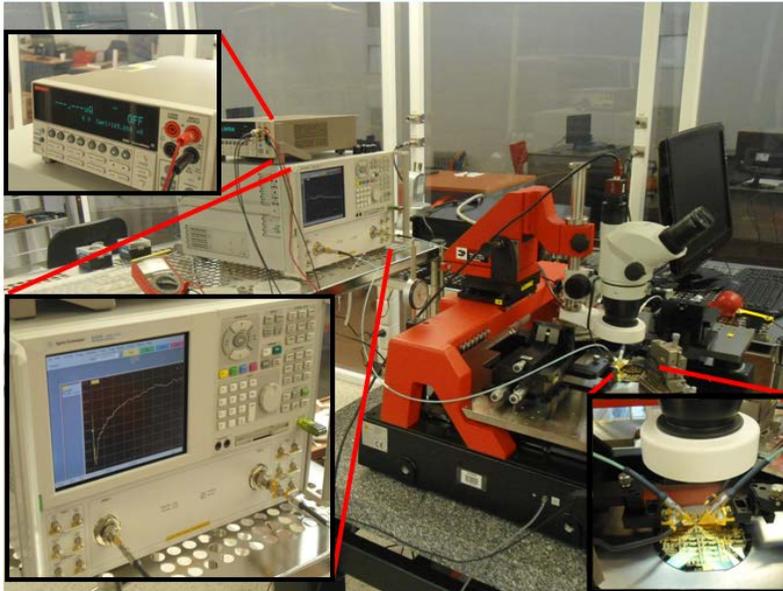


Figure 6. Measurement set-up. DC Source, VNA (Vector Network Analyzer), and probe station.

The pull-in voltage measurements were recorded and compared with the predictions of eq.1 and eq.4.

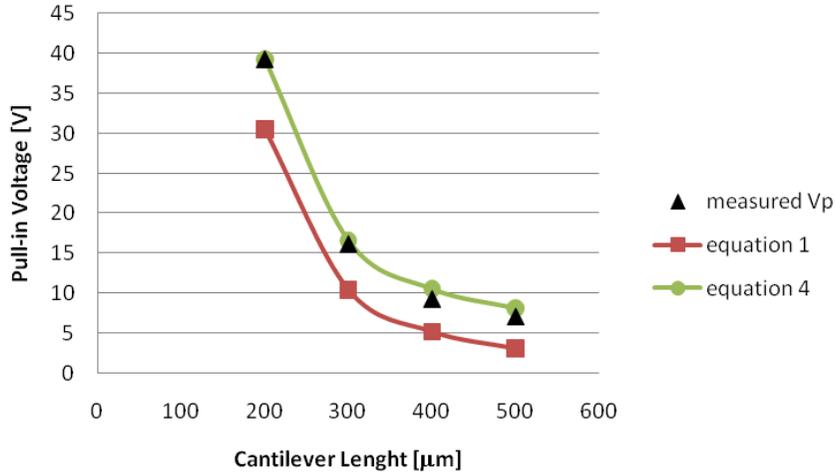


Figure 7. Measured pull-in voltage (black triangles), equation 1 prediction (brown trace), and equation 4 predictions (green trace)

The results show that the new improved equation (eq.4) is sensible more accurate in predicting the pull-in voltage for different  $L$  values that the classical model (eq.1).

In order to verify the accuracy of the simplifier model proposed in section II, and validate the design equations adopted, the measured RF performance of the switches was compared to the model predictions for 3 key performance indicators (fig.8), namely the return loss, the insertion Loss and the transmission phase (the prediction of the transmission phase is important if the switch is intended to be used some kind of phase shifters).

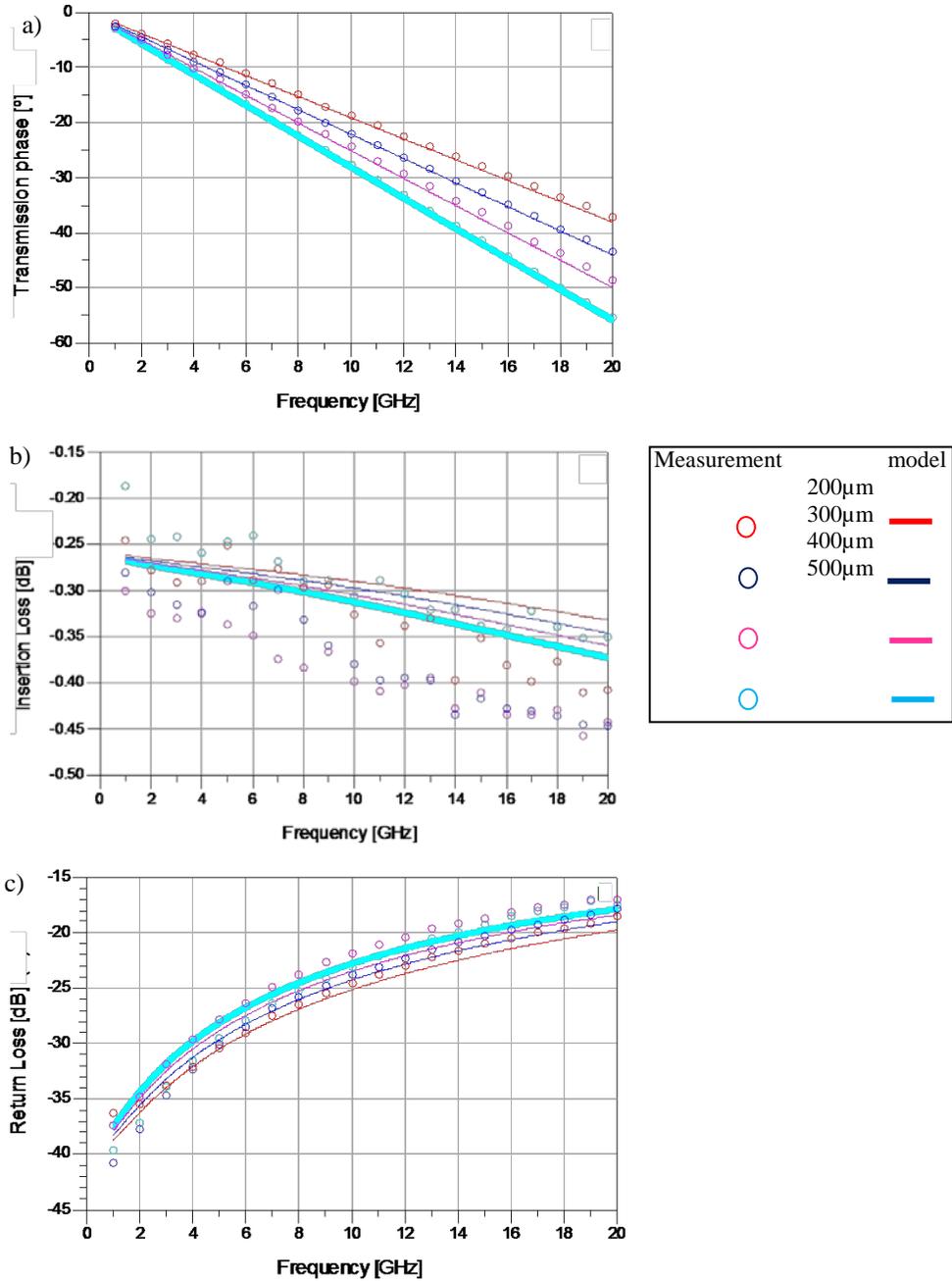


Figure 8. Measured RF performance of the switches vs model predictions for the main three key performance indicators: a) Transmission phase, b) Insertion Loss, and c) Return Loss.

There is good agreement between the measured data and the theoretical predictions, showing the model and the design equations

proposed are a reasonable choice and can be a useful tool for speeding up the design cycle.

### **Conclusion**

A set of simplified equations were derived for the design of RF MEMS series switches, and a simplified model was proposed. The equations allow to accurately predicting the pull-in voltage and the key RF performance indicators of the switches. A set of for series switches, with different cantilever lengths, was designed, fabricated and measured. The measured data shows good agreement with the predictions from the derived design equations and the proposed simplified model. The proposed design approach could be a valid tool for speeding up the design of the RF MEMS series switches.

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# THEORETICAL FRAMEWORK AND INITIATION OF SCIENTIFIC PROJECT “LIFE. MOTION OF ENERGY- ELEMENT- INFORMATIONAL UNITY OF THE MATTER”

*Lyudmyla Bobukh, PhD (technical), Assistant Prof.*

National metallurgical Academy of Ukraine, Dnepropetrovsk, Ukraine

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## Abstract

To provide a scientific answer to the questions “How did life originate?” and “How does life affect the Earth and the Earth affect life?” a concept of the function of energy-element-informational state of physical and biological systems  $f(E, C, I)$  has been developed. The regularities have been established and simulation of Life as a natural phenomenon, which is organized by moving in space and time energy-element-informational trinity of the Universe, has been run.

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**Keywords:** Life, motion, energy, element, information, system model

## Introduction

The U.S. National Research Council has formulated 10 key questions to which geologists and planetary scientists seek answers in the early 21st century. Among others, there are questions \* How did life originate? \* How does life affect the Earth and the Earth affect life?

Life is one of the forms of existence of the matter that occurs naturally under certain circumstances in the course of its development.

Modern science looks at material systems as matters, energy fields, noting that reflection is the universal property of the matter. The role of reflection (information processes) is of special importance for biosystems that actively perceive information from the external environment, transform it, use it for its development, accumulate, store and communicate it to the external environment.

Motion is an essential attribute of the matter. When moving a material system changes its *state* which is manifested in the change of *properties* of the system.

To be able to describe changes of the system state (with a complex change in its substance, energy and information) a scientific study of some

concept, feature, function of unity of elements, energy and information is required.

#### Objective

- To develop the concept of the function of energy-element-informational state of systems;
- To develop an overall picture (model) of the organization of life of the Universe, from nanosystems to the mega-level systems;
  - To develop a plan for further multidisciplinary system research within the project "Life".

### Results and Discussion

#### Function of Energy-Element-Informational State of Systems

The common (for physical and biological objects) components which together define the structure and properties of systems are:

- A qualitative and quantitative set of elements (C);
- A qualitative and quantitative set of energies (E);
- A qualitative and quantitative set of information (I);
- Configuration of the energy-element-informational path (S);
- The rate of change of the energy-element-informational state ( $v$ )

Physical and biological objects are considered (Bobukh, 2001; Bobukh, 2002; Bobukh, 2012a) as systems of qualitative and quantitative sets of energies  $e_1, e_2, \dots, e_n = E$ , elements  $c_1, c_2, \dots, c_n = C$  and information  $i_1, i_2, \dots, i_n = I$ . Function  $f(E, C, I)$  is the characteristic of the energy-element-informational state of the system.

Figure 1 shows the schematic arrangement of hydrogen H, p-, s-, d-, f- elements depending on the values of the energy-element-informational function  $f(E, C, I)$  of each individual atom of the element as well as properties of systems formed from the atoms of H, p-, s-, d-, f- elements.

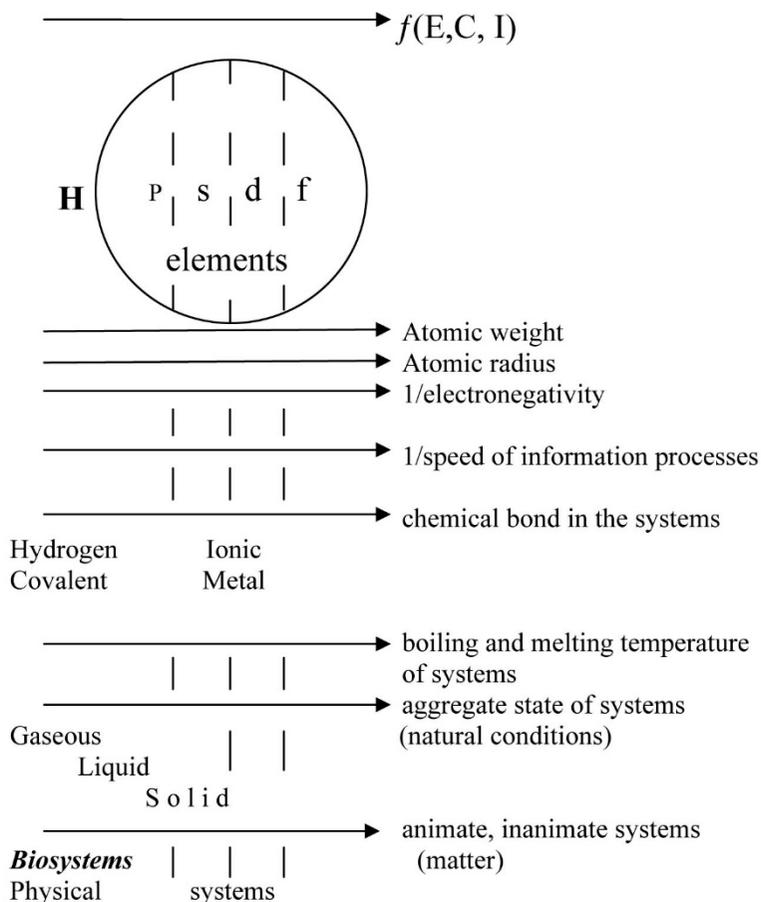


Fig. 1. Energy-element-informational function  $f(E,C,I)$  and properties of systems of H, p-, s-, d-, f- elements

Analysis of the established bonds makes it possible to designate elements that form systems with the lowest values  $f(E,C,I)$ : element H as well as p- elements of the 2, 3 periods, IV-VI groups (H, C, O, N, P, S, Si – biogenic elements).

Biogenic elements have relatively low values of the atomic mass and atomic radius and high values of electronegativity and *the rate of information processes*. In the formation of molecules ( $CH_4$ ,  $NH_3$ ,  $H_2O$ ) a covalent chemical bond is realized by the valence electrons, the atoms tend to  $sp^3$ -hybridization (H atom gives its single  $1s^1$  electron; C, O, N, P, S - p electrons). Due to the intramolecular bond of H with C, O, N, P, S formation of DNA helical structure is possible (Fig. 2).

Hydrogen  
Covalent

Ionic  
Metallic

atomic mass  
atomic radius  
1/electronegativity  
1/rate of information processes  
chemical bonding in the systems  
boiling and melting points in the systems  
state of aggregation of the systems  
(natural environment)

elements

living, non-living systems  
(matter)

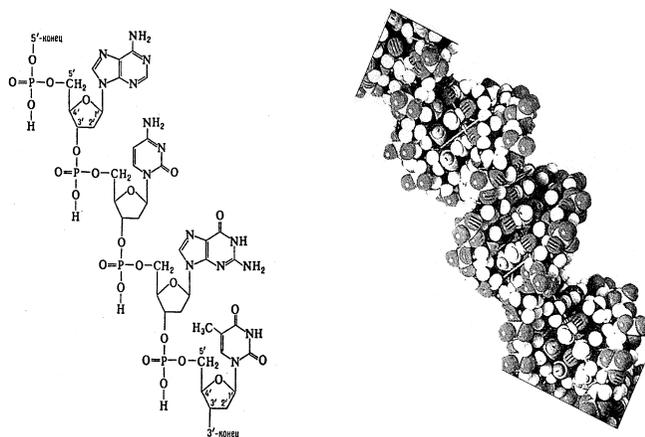


Fig.2. Structural formula and volumetric model of DNA

Usually by the properties of a chemical element are meant, firstly, the properties of its free atoms and, secondly, the properties of its elementary substance. Most of these properties have a clear periodic dependence on atomic numbers of chemical elements (a relevant number of protons in the atomic nucleus). Among these properties the most *studied*, significant, being of particular importance in explaining or predicting chemical behavior of elements and compounds formed by them are the following: *C* (atomic mass, atomic and ionic radii); *E* (ionization energy of the atoms, electron affinity energy, electronegativity, atomization energy of elementary substances, oxidation level, oxidation potentials of elementary substances).

As for the establishment of periodic dependence of change of the information properties (I – perception, transformation, accumulation, storing

and communication) of atoms and systems they formed, these researches are just only beginning.

*A group of physicists from the Max Planck Institute in Germany managed to "record" information about the quantum state of a photon to a single outer-shell electron (the outer shell configuration is  $5s^1$ ) of a rubidium atom. The scientists have generated a photon and directed it at a rubidium atom. After the photon interacted with the electron, the researchers studied the behavior of the latter and came to the conclusion that the quantum state of the photon that "had hit" it could be quite accurately judged by the nature of motion of such electron round the atomic orbit. That is, the information has been recorded to the electron and, most importantly, the scientists succeeded in reading it.*

It is probable that similar processes of "recording" – "reading" at the atomic level take place in nature, in the natural environment. For example, interaction of a photon (light – in a narrow sense) and  $1s^1$  electron of a hydrogen atom causes a change in the informational state of the latter ("recording"). The hydrogen atom with a changed informational state, being an active participant of the construction of  $H_2O$ , DNA molecules, will change the informational state of the "reading" atoms C, O, N, P, S and the whole molecule of  $H_2O$ , DNA.

Thus, with maintained energy (E), element (C) characteristics,  $H_2O^I$ ,  $DHK^I$  molecules will have an altered information characteristic (I) and so an altered energy-element-informational state of the system as a whole.

### **Motion. Change of Function of Energy-Element-Informational State of Systems**

The rate of the system transition from one energy-element-informational state to another is:

$$v = \frac{\Delta f(E, C, I)}{\tau} \quad (1).$$

This equation (1) is a mathematical expression of the essence of matter which is the motion of the energy-element-informational unity.

Using the characteristic of change of  $\Delta f(E, C, I)$  and the equation (1) we can describe the rate of change of state of systems of various space levels, such as nano ( $\Delta f(E, C, I)_{\text{atom H}}$ , C – a hydrogen atom  $1,67 \cdot 10^{-24}$  g; DNA), micro (cell), macro (organism), and mega ( $\Delta f(E, C, I)_{\text{Universe}}$ , C – the Earth  $5976 \cdot 10^{21}$  kg, the Sun  $2 \cdot 10^{30}$  kg, the Galaxy  $\sim 10^{11}$  of the Sun's masses).

The way (S) of natural change of the energy-element-informational state of a system located anywhere on the surface of the Earth has a complicated cyclical pattern (Fig. 3) due to the mechanical motion of the Earth around the center of the Galaxy (1), the Sun (2) and its own axis (3).

The state of the Earth – the Sun – the Galaxy physical system changes continuously and quite rapidly.

The Galaxy as a whole is moving relative to the background radiation at a speed of 620 km/s. The linear speed of movement of the Solar System around the center of the Galaxy is 220 km/s. The linear speed of movement of the Earth around the Sun is 29.765 km/s. The linear speed of the Earth’s rotation at the equator is 0.465 km/s.

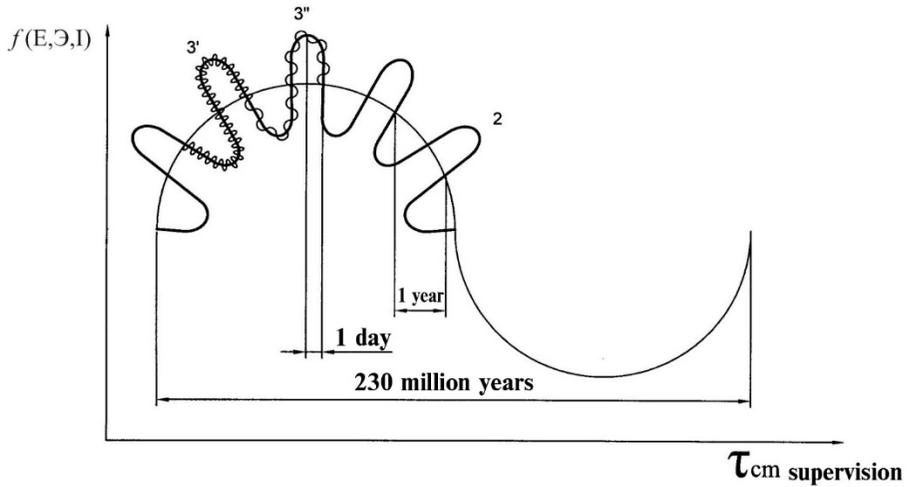
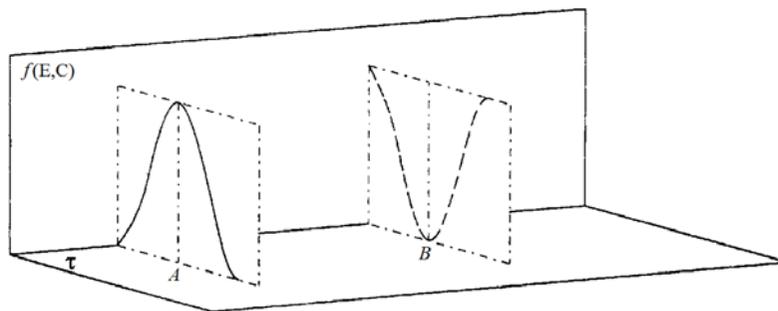


Fig.3. The equilibrium trajectory of change of the energy-element-informational state of any point on the Earth’s surface the form of which is determined by the trajectory of the mechanical motion of the Earth around the center of the Galaxy (1) the Sun (2) and its own axis (3).

The change of state of the Earth – the Sun – the Galaxy physical system on the “spiral on a spiral, on a spiral” complex trajectory sets the same “mirror” trajectory (Fig. 4) of change of the energy-element-informational state of the system of biogenic elements H, C, O, N, P, S, generates a DNA helix, a cell, an organism.



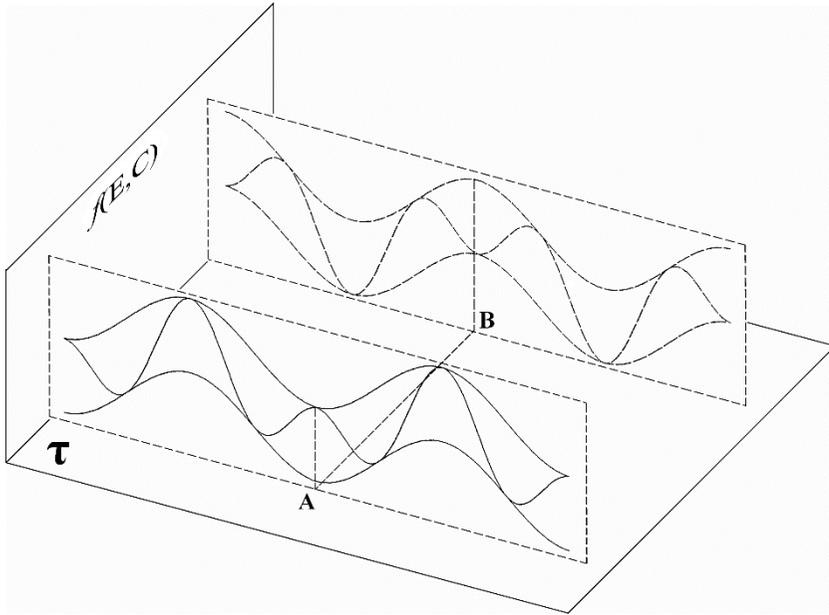


Fig.4. Diagram of dependence of change of the energy-element-informational function  $f(E,C,I)$  of biosystem (B) on the change of energy-element-informational function of the Universe (A). Diagram of Le Chatelier-Braun Principle

Due to the low values of the energy-element-informational inertia, the systems based on biogenic elements (perceived as biosystems) are able to change their states  $\Delta f(E,C,I)_{\text{biosystem}}$  with speeds coherent with the natural rate of change in the characteristics of the environment  $\Delta f(E,C,I)_{\text{Universe}}$ .

The energy-element-informational *motion of the Universe "creates" a man* like all other biological systems (Fig. 5).

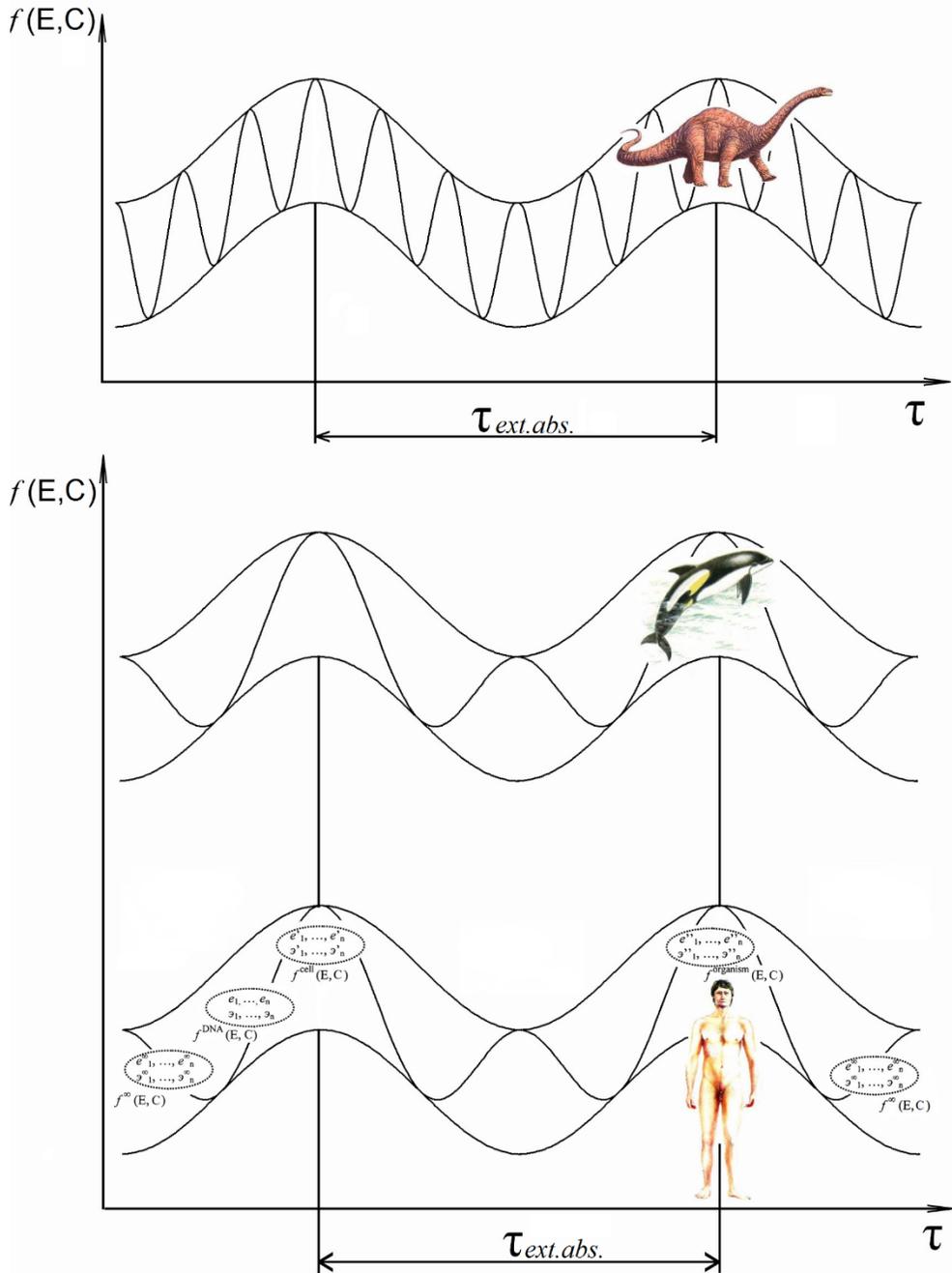


Fig.5. Organization and development of biological systems (DNA  $\rightarrow$  cell  $\rightarrow$  organism) taking place due to changing of the function of energy-element-informational state  $\Delta f(E,C,I)$  of the environment;  $\tau_{outside\ observer}$  is the length of time reviewed by an outside observer

A billion years ago a day lasted just 15 hours. But only blue-green

algae or cyanobacteria, inhabiting the Earth at that time, could “see” it. Approximately 530 million years ago the Earth rotated so fast that a day lasted 21 hours. Its current rotation period is 24 hours. The rate of rotation of our planet around its own axis is slowing down.

We might say that the “Dinosaur” biosystem is organized by the Earth – the Sun – the Galaxy physical system at relatively high rotation rates of the Earth around its own axis. Organization of the “Man” biosystem is possible only at lower rotation rates of the Earth.

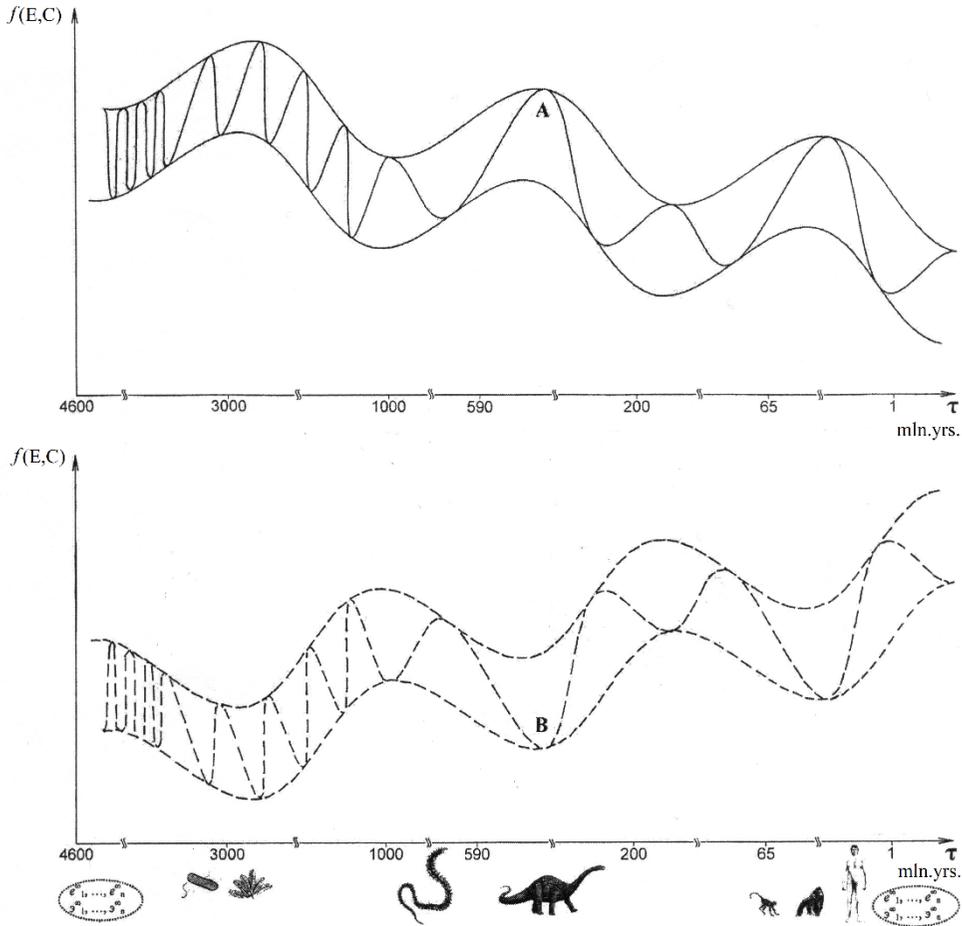


Fig. 6. Changing of the function of energy-element-informational state  $\Delta f(E,C,I)$  of the Earth (A) and biosystems (B)

A “dramatic failure” (for example, sudden change of the speed of the Earth’s rotation at its collision with a large space body) in the natural mechanical motion of the Earth – the Sun – the Galaxy physical system on any part of the “spiral on a spiral, on a spiral” trajectory can cause a

disruption of coherence of oscillations of the energy-element-informational functions of biosystem and the Universe and result in the death of all or some of the biological systems existing at the moment of collision and organization of new biosystems meeting new requirements of coherence (Fig. 6).

**Model of Life (Energy-Element-Informational)**

In the practice of materials science to describe the state of an isolated physical system the scientists use the diagrams (Fig. 7) of element, energy – properties that are discrete in time. In this case it is possible to consider the state-property relationship both in each given point in time and throughout the a-B-d path.

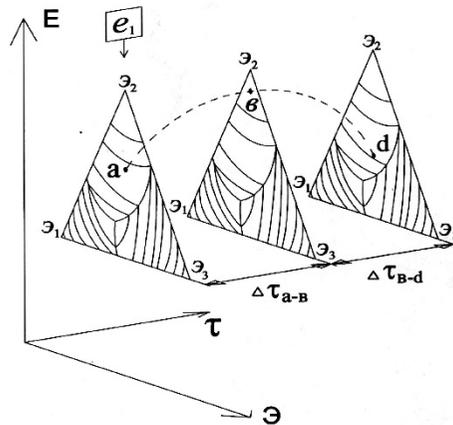


Fig.7. Diagrams of change of the energy-element state of a physical system, coordinates E-C-τ

When plotting diagrams of biosystems, the information content should be taken into consideration (Bobukh, 2009). A diagram shown in Fig. 8 plotted in E-C-I coordinates for biogenic elements H,C,O,N,P can serve as a tool for study of the energy-element-informational properties of prior-to-DNA, DNA structures, principles of cell, organism formation.

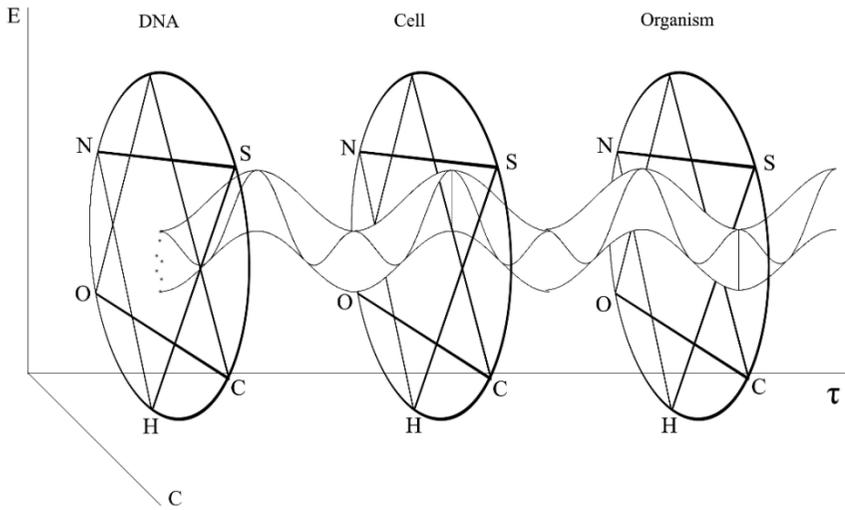


Fig.8. Diagrams of change of the energy-element-informational state of a biological system, coordinates E-C-I( $\tau$ )

Processes of organization and functioning of the energy-element-informational unity as a living system (biosystem) are the continuous time processes.

Such processes of continuous transition of an open biological system from one energy-element-informational state into another may be described (Bobukh, 2012b) with the help of a kinetic diagram (Fig. 9).

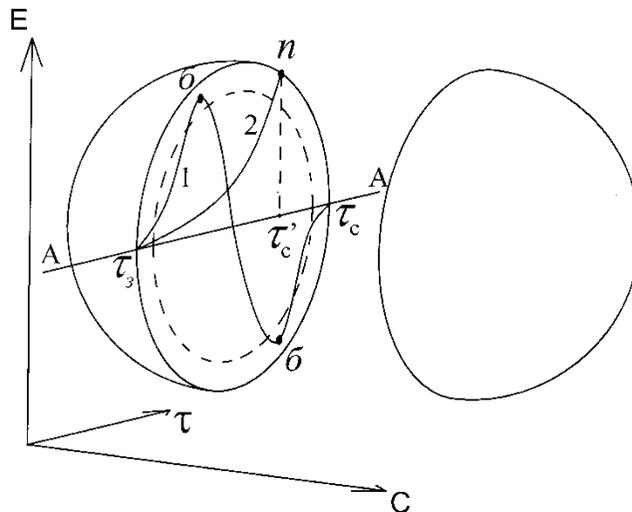


Fig. 9. Model of life of a biological system in the energy-element-informational space; A-A is a line of the energy-element-informational equilibrium;  $\tau$  is a lifetime of the biosystem from birth (3) to death (c)

The model of life (Fig. 9) is part of the energy-element-informational space within which the natural processes of fluctuation of  $f(E,C, I)$  relative to the A-A equilibrium line take place. The graph above shows the passage of the  $f(E, C, I)$  value through a maximum over  $\tau_3 \div \tau_c$  period of time from birth (coming into existence) to death.

Technical definition: Life is motion  $v = \frac{\Delta f(E,C,I)}{\tau}$ , a change of the energy-element-informational function  $f(E,C,I)_{\text{of biosystem}}$  in the form of oscillations relative to an equilibrium state; a value of the amplitude of oscillations changes and, throughout the lifetime of the biosystem, passes through a maximum; the biosystem equilibrium state changes in accordance with changes in the equilibrium trajectory of the Earth as it moves in the energy-element-informational space of the Universe following the “spiral on a spiral, on a spiral” path ...».

The surface on which the point of diversion of  $f(E,C,I)$  from the equilibrium state limits (rotation figures of Fig.10: ellipsoid, sphere, egg) the energy-element-informational (*en-el-info*) space in which the Universe organizes life.

Values of time  $\tau_3 \div \tau_c$  and volume  $V_f(E,C,I)$  of existence of a biosystem can serve as a technical quantitative and qualitative characteristic of its life.

$f(E,C,I)$

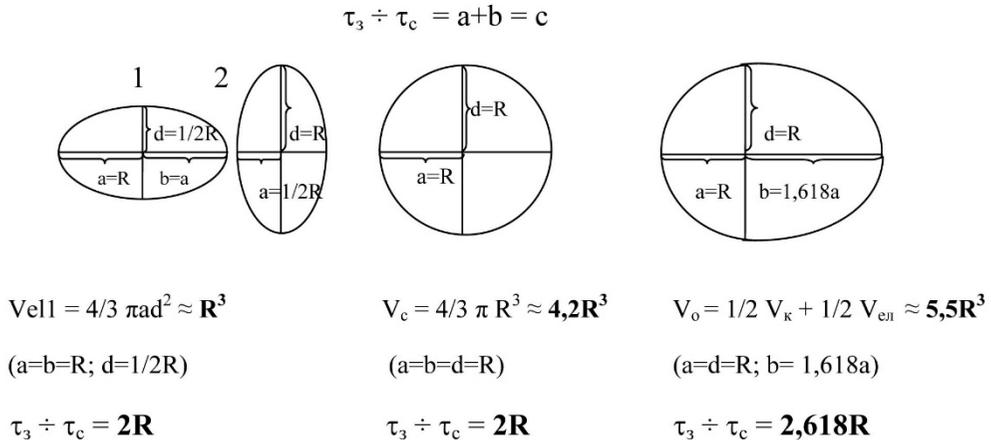


Fig. 10. Models of life (ellipse, sphere, egg) and values of quantitative and qualitative characteristic of life (time  $\tau_3 \div \tau_c$  , volume  $V_f(E,C,I)$ )

Figures in the form of ellipses 1 and 2 have equal volumes  $V_{e11} = V_{e12} = R^3$ , wherein  $(\tau_3 \div \tau_c)_1 = 2R$ ;  $(\tau_3 \div \tau_c)_2 = R$ . The values of volume and

time are as follows: within the sphere  $V_{III} = 4,2 R^3$ ;  $\tau_3 \div \tau_c = 2 R$ ; within the egg  $V_{II} = 5,5 R^3$ ;  $\tau_3 \div \tau_c = 2,618R$ .

Comparative analysis of time and volume of change of  $f(E,C,I)$  in the en-el-info space shows that it is the egg that has an optimal ratio and the largest values of the quantitative and qualitative characteristic of life ( $\tau_3 \div \tau_c$ ,  $V_f(E,C,I)$ ).

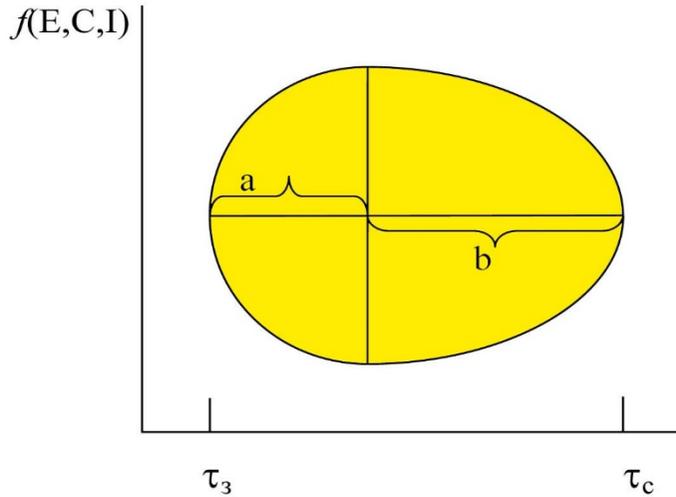


Fig.11. The “Golden Egg” of Life

The golden ratio has been recognized a universal law of living systems. Therefore the laws of the golden proportion were used to make mathematical calculations needed to produce a figure of an egg and its geometrical representation. The golden ratio is a proportional division of a line into unequal parts wherein the smaller segment refers to the bigger one as the bigger one to all  $a : b = b : c$ . The segments of the golden proportion are expressed as an infinite irrational fraction 0,618... if “c” is taken as 1,  $a = 0,382$ ; ( $c : b = b : a = 0,382$ ;  $b = 1,618a$ ). Numbers 0,618 and 0,382 are the coefficients of the Fibonacci sequence.

Fig. 12 shows en-el-info models of life of biosystems 1 and 2. Both systems were born (came into existence) at the same time  $\tau_{31} = \tau_{32}$ . The lifetime of system 2 is longer than the lifetime of system 1;  $\tau_{32} \div \tau_{c2} > \tau_{31} \div \tau_{c1}$ . The volume of “development” of the en-el-info space by system 2 is bigger than that of by system 1;  $V_f(E,\exists,I)_2 > V_f(E,C,I)_1$ .

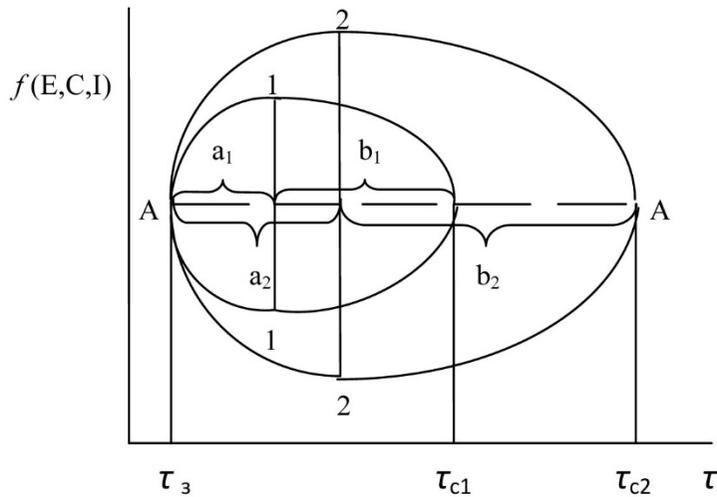


Fig. 12. Energy-element-informational model (egg) of life of biosystems 1 and 2;  
 $\tau_3$  – time of birth (coming into existence),  $\tau_c$  – time of death

Comparative graphical analysis of models 1 and 2 shows that the more vigorously the value of  $f(E,C,I)$  increases in the initial period of organization and functioning of the biosystem (from the moment of its birth  $\tau_3$  to achieving maximum values of  $f(E,C,I)_{1-1}$ ,

$f(E,C,I)_{2-2}$ ) the larger the value of segment a ( $a_2 > a_1$ ) will be and, as a natural result of the golden ratio principle, the value of length c ( $c_2 > c_1$ ) and volume of life increases.

Man, as a biosystem endowed with brain, being aware of the regularities of natural en-el-info processes, has the ability to artificially influence the amount and quality of his life by purposefully changing the value of  $f(E,C,I)$ .

The following calculations

- 1)  $a = 22,9$      $b = 37,1$      $c = 60$ ;
- 2)  $a = 38,2$      $b = 61,8$      $c = 100$ ,

made using an egg as a model of life show that if the maximum of increase in the value of  $f(E,C,I)$  is reached at the age of 22.9, then the total length of life is 60 years; if the maximum of increase in the value of  $f(E,C,I)$  is reached at the age of 38.2, then the total length of life will probably reach 100 years.

**The total length of time** of living of a person who purposefully, actively increases the value of his/her energy-element-informational unity  $f(E,C,I)$  of the biosystem, for example, with other conditions being equal, **due to growth of the information content** (studies, education) **will be large**.

*Director of the Institute of Human Brain of RAS S. Medvedev said: Active creative work of the brain increases our lifespan. For example, the*

*process of creation awakens the brain regions important for the person's emotional activity, including those in hypothalamic structures affecting the endocrine system which is directly connected with the aging processes. Solving of supertasks can cause formation of new connections and generation of new neurons, nerve cells, in the brain of even an elderly person. Length of life of people who throughout their lives have to constantly use their heads is significantly higher compared with those whose brains do not experience any severe stresses. [You Need to Work with Your Head. Komsomolskaya Pravda in Ukraine, January 14-20, 2009.]*

*Director of the Russian Gerontological Research Center V. Shabalin said: In the Stone Age the average duration of life was 18-20 years. In the Middle Ages it was about 30-40 years. It was only in the late XIX century when the people continued to live to 35 years of age in average, by the end of the XX century the average length of life increased to 70-75 years. That is only in the last century - incredibly fast! - we have begun to live twice as long. **We are that information base** that allows our descendants to move up to a higher level. [The Smart Will Live Up to 150 Years Old and the Lazy Will Become Extinct. Komsomolskaya Pravda in Ukraine. October 9-15, 2009.]*

### **Multidisciplinary System Research**

The established and described above laws made it possible to present a qualitative picture of organization of life of the Universe (Fig. 13).

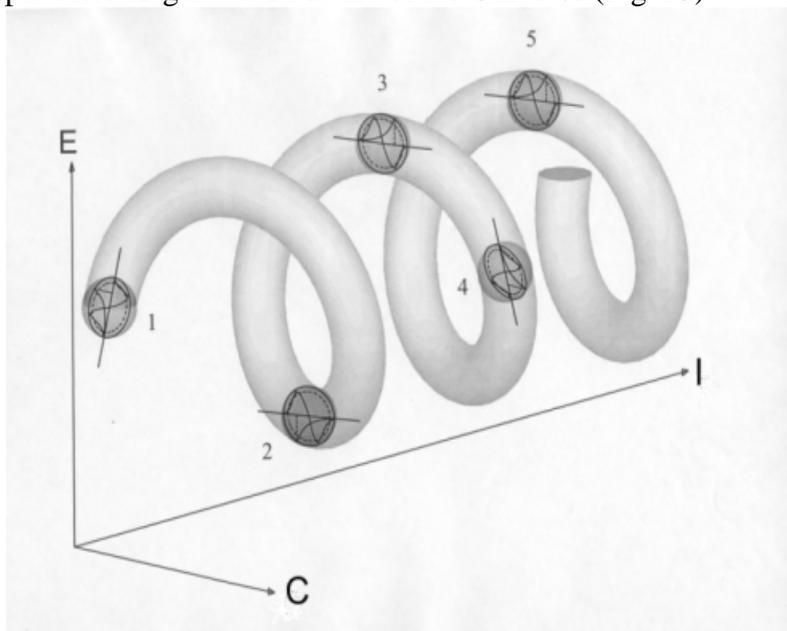


Fig.13. Cyclic change of the function of state  $f(E,C,I)$  of the Universe and biosystems 1-5, aligning their equilibrium according to the change of energy-element-informational characteristics of the Universe

Figure 13 shows the cyclic change of energy-element-informational characteristics of the environment occurring during the time that is commensurable with the duration of the existence of successive generations of biosystems. In this case we should talk about alignment of the equilibrium state in each of the generations with a gradual transition from the energy-element-informational properties inherent in system 1 to the energy-element-informational properties inherent in systems 2, 3, 4 and 5 by means of alternation of generations in harmony with changing characteristics of the environment.

A variety of shapes and properties of the wildlife systems is attributable to the variety of possible options for energy-element (H, C, O, N, P, S, Si)-informational conjugations formed and functioning under various constantly changing energy-element-informational conditions of the environment.

We may say that a qualitative picture of life has been drawn. To perform systemic work on quantitative specification of the picture of life it is necessary to unite the efforts of physicists, chemists, materials scientists, biologists, computer scientists, planetary scientists and astronomers within the multidisciplinary project "*Life. Motion of Energy-Element-Informational Unity of the Matter*".

### **Foremost objectives of the Project**

- study of patterns of change of the energy-element-*informational* unity in the periodic table;
- plotting of discrete diagrams of energy-element-informational state-property of *helical structures* on the basis of elements H, C, O, N, P, S, Si (prior-to-DNA structures; physical systems)
- establishment of laws of *the process* of change of the energy-element-informational state and hence the properties of systems on the basis of biogenic elements H, C, O, N, P, S, Si (helical DNA structure, cell, organism, biosystems);
- *modeling*, mathematical specification of the equation of Life, a natural energy-element-informational cyclic process of formation, development and evolution of spiral structures of H, p-elements in the past, present and future lifetime of the Universe.

### **Conclusion**

The important role of *information* as an integral part (along with the matter and energy) of the characteristics of systems, qualitative and quantitative indicators of which *should be considered* to fully cognize and describe the properties of material systems, *biological systems in particular*, has been shown.

A concept of the energy-element-informational function of state  $f$  (E,C,I) of the matter (nano-mega level) has been developed (the same for both physical and biological systems).

The regularities of Life have been established and a possibility of modeling of Life as a natural phenomenon organized by moving in space and time energy-element-informational triunity of the Universe has been opened.

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