



## Military and Army Department of Ghaznavid Dynasty

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### Abstract

When Islam was entered Iran, Department of Army was also changed like other organizations in this country. Comparing to armies of 4<sup>th</sup> and 5<sup>th</sup> decades in Iran, Ghaznavid army was different from Samanids army through relying on a body composed of its relatives from Turk members. However, the organization changed into a multinational army as a result of lack of force or lack of trust in some Sepahsalar. The organizations was composed of different nations and generations; although, the main core was again composed of Turk slaves. The present study is in kind of a descriptive-analytical and historical research and is aimed at investigating quality of military and army department of Ghaznavid dynasty through applying traditional references and current studies.

**Keywords:** Army, Ghaznavid, dynasty, cavalry, infantry, military department, militarism, war.

### Introduction

Ghaznavids, who were slaves of Samanid army, achieved Sepahsalar position after passing development stages. They aimed also at developing a wide expanded government, so that they can be raised among emirs of west Iran. The government included some characteristics as follows: Geographical expansion based on principles of empire, Power based on aggressive militarism, making religious policies in supporting Abbasid Caliphate instead of national and public policy

Since Mahmud needed powerful army in order to create empire, he established an equipped and powerful army with different racial diversity through using support of Turk slaves and through relying on economic source, resulted from invasions to India. Results of such policies were extremely bad for economic and social condition of society by that time, since in time of invasions or even in normal conditions, double taxes were imposed on people<sup>1</sup>. On the other hand, participation of many rural elements, under title of "volunteer fighters", provided conditions for occupation of lands by big landlords. This could also increase deprivation of rural people more than before.

One of the main disputes between Ghaznavid army and pre-Islamic armies was hereditary nature of sensitive positions before emergence of Islam, which has been related to several big dynasties. For example, in Sassanid army, the highest position (Arkabez) was hereditary in royal family. In addition to positions of "head of army" and "cavalry commander" were also belonged to two big families<sup>2</sup>.

In addition, there were also some differences between military styles of Sassanid and Ghaznavid dynasties and it was using elephants in fights. There is no doubt that, Turk army were important for Ghaznavid emirs because of their local

independence and being far from their main territory. The army used to be recruited by far away sates in adolescence age. They used to form the minds of the adolescents and grow their bodies, so that they can fight. The only connection of them was king, which were honestly loyalty against him. For example see the poem, which confirms the claim<sup>3</sup>:

*A submissive slave would be better than hundred children  
Children want their fathers' death and slave wants emir's survival*

Developing facilities for slaves would not be limited to Ghaznavids, but also Moatasem of Abbasid Caliphate in 218AH expelled Arabs from Egypt state and impelled instead Turks. In addition Yaqub Leis had also more than 2000 slaves, who were his personal guards. His brother, Omar used also to buy young slaves and then entered them to army after training. They were his spies and follow common style of Ghaznavid Dynasty<sup>4</sup>.

Deylamids started also to employ slaves in order to organize their army, since the army was mainly from mountain folks, who were mostly depended on infantrymen and needed Turk slaves for providing cavalry force. Moez-o Doleh slaves were mostly from Turk tribes and they had also more privileges than Deylamids<sup>5</sup>.

Samanids, who had achievement to Transoxiana, used to employ Turk slaves against Iranian elements, so that they can provide development in their government's organs. Hence, in 4<sup>th</sup> decade of AH, west Islamic armies have been established based on a core axis of slaves. They used to also changing Turk slaves with other tribes, when they had a sense of hate about them, since providing an army from slaves was so risky. For example, Alebtakin, who was a Samanid slave, became so powerful after being governor of Khorasan and had more than 2000 slaves.

Finally, in after collapse of Samanid dynasty, the slaves of Alebtakin established Ghaznavid dynasty. General Commander of army was a person called "Big Hajeb", who had title of "chief of slaves" after commander. However, Beyhaghi believed that slave and the chief of slaves would refer to a unit concept<sup>6</sup>.

The highest positions of Ghaznavid army were from Turks, although, Tajiks, Indian, Arab, etc members were also included. From Turk slaves, specified slaves for protecting king were known under title of "specified slaves of king". However the number of the slaves is not clear, there is no doubt that such powerful army like Ghaznavid army might include a large number of the slaves. Ghaznavids used to buy their slaves from slave sales markets in Transoxiana, they used to also entering many slaves in form of rewards from prisoners of war. Mahmud Ghaznavi took many slaves in invasion to Khorezm. He took also many other slaves in war against Ali-TakininSamarkand<sup>7</sup>.

In addition, Mahmud, in his invasion to Ghanoj, took more than 50000 slaves. According to Nezam-ol Molk statement, the slaves used to be trained in a certain course and then used to start giving services for king and gradually pass military stages in order to achieve emir position. It should be mentioned that, the stages and hierarchy have been also common among Samanids, for example Alebtakin had achieved position of "Hajeb-olHojabi". Getting experience by Ghaznavid slaves has been mostly in war fields. Nazem, author of book "Sultan Mahmud" believes that the first level in Ghaznavid army has been Khiltash, who has been commander of 10 rides<sup>8</sup>. However, Beihaghi believes also that KHiltash is from units of Ghaznavid army.

Mostly, training of slaves was along with children training. For example, Masud trained son of Yanaltakin as a hostage in specific place. Turk slaves, who were under training in palace, were used to get attentions because of their braveness and finally they might get some positions. For example, one of the slaves was survived because of his beautiful face and became governor<sup>9</sup>. Imperial slaves used to fight in separated groups and they were usually heart of army. When regulate armies was facing failure, imperial slaves were sent to fight against enemy. In hierarchy of slaves commanding, some slaves were known under title of "House Colonel". The slaves were usually responsible for running house affairs. In fact, the position had been relatively a civilian position. In order to meet their needs, some slaves were also existed under title of "House Teacher". They had some special banners with arm of lion on it and their special gun was also bow and mace, which was a symbol of Sassanid army<sup>10</sup>.

The most important responsibility of slaves was standing in lines while ceremonies in castles and preparations for conducting required services in the ceremonies. Some jobs were specified for slaves such as weapon owner, banner owner, etc. clearly, number of slaves used to achieve 4000 annually. Big commanders were not allowed to have certain slaves similar to

emirs and kings; although, in some cases they had specified slaves because of being far from government center or weakness of king. For example, Haroon, son of Alton-Tash, had 2000 slaves in age of Sultan Masud and became independent. Sometimes Ghaznavid kings gift some slaves to their Sepahsalar while going to war field. For example, Sultan Masud gift 130 slaves to Ahmad Yanaltakin while positioning him as governor of India<sup>11</sup>. The slaves were responsible for inspection and reporting king. The slave, who could achieve commander position, he could be the main heirs of king after his death.

Sometimes, king preferred to separate slaves and hence, good slaves used to be selected for king and other used to be remained for other members in palace. Contrary to efforts of king to avoid loyalty of slaves to their commander, sometimes the slaves used to leave king. For example, in 1040, many slaves left Ghaznavid dynasty and joined Seljuk. It was observed that most of the old slaves were forced to do secondary affairs around the palace. Maybe this has been because of old age and disability of the mentioned slaves<sup>12</sup>.

## Results and Discussion

**Racial diversity in Ghasnavid army:** Some historians believe that lack of local soldiers in Ghaznavid army could be a sign for weakness; although, such idea could not be significantly trustable due to conditions of Ghaznavid era, since Ghaznavid kings were forced to replace new powers instead of the supporters. This was because armies with different racial diversities were mostly source of power. Racial diversity in Sultan Mahmud army demonstrated high insight. Mahmud used to select his army members from Turks and Indians, since he used to frighten both races from each other, so that they obey his orders because of fearing<sup>13</sup>.

If an army was from a unit race and generation, risk probability for kingdom was in high level. Kahjeh Nezam-ol Molk, in a season of policy application have appreciated the racial diversity and has stated that the army would compete against each other because of their ethnic and would finally fight harder<sup>14</sup>. The historical fact has been completely right; although, Ghaznavid army have not been the only multinational army, but also many tribes have had also multinational armies including Buyids, Abbasids, and Fatimids of Egypt. The soldiers were special, since each of them had special skill and this was useful for army. In Ghaznavid army, relatives of king used to form main part of army<sup>8</sup>.

Turks were powerful people with characteristics of braveness and loyalty and hence, fight fields were clear area for applying them. However Iranians were responsible for court jobs, in some cases, personal relations of individuals with king were effective. For example, Ahmad Yanaltakin, treasurer of Mahmud was achieved India's governor position by Masud and an Iranian teacher named AbolhasanAraqi was selected as

commander of Arabs and Kurds in Khorasan. Mentioned appointments indicate that, government and military organizations have not been significantly impervious<sup>9</sup>.

Along with increase in Ghasnavids' power, unrest and chaos was appeared in planes of mid Asia. A constant crowd of Aghoz and Ghebchagh tribes started to migrate and caused pressure in north boundaries of Ghaznavids. For example, a group of Aghoz Turks, which were called Iraqi Turk in order to separate them from Seljuk Turks, got permission of Mahmud to accommodate in Khorasan. The Turks entered to Ghaznavid army and some poets like Manoochehri and Farrokhi created some poems about Turks of Khorloq, Yaqma, GaiTokhsi, Chagal, and Khotan<sup>9</sup>. Ghaznavids governors were also trended in employing local tribes; for example, Altontash used to apply Kahab Turks in order to defend Khorezm<sup>10</sup>.

In general, some races have been active in Ghaznavid army as follows:

**Indians:** Indians were those groups, which have been similar to Turks, since they have not been depended on local interest and bias. The Indian armies, similar to Arabs and Kurds, have had a local commander, who has been known as Sepahsalar of Indians. The commander has been under control of big Hajeb and they have had an independent station in Ghazni.

Presence of Indians could lead to power balance against Turks and they were trustable in many dimensions. The armies used to be applied in hard mission, especially protecting opponents. Indian soldiers had high capability and on the other hand, their religion had no limitation for employment in army of Ghaznavid fanatic kings. Author of Sistan History has bitterly remembered murder of Muslim and Christian people by Indian armies<sup>11</sup>.

**Deylamids:** Deylamids, mountain dwellers of Khazar Sea, after becoming powerful in 4<sup>th</sup> century, were distributed in many regions of Iran. Although, their motivation from the distribution is not clear, probably poverty of their birthplace has forced them to do this. They were employed in most strange armies and have been also employed in Egypt and Fatimid kingship. Naser Khosro mentions a Deylamid Group, who had an independent army in Cairo. Deylamids were joined Mahmud's army after war between Abo Ali Simjuri and Sultan Mahmud, which had led to victory of Sultan Mahmud. Fame of most Deylamids has been probably in their infantry wars; although, this would not mean that they have had no cavalry wars. Clearly, many Deylamid scholars have been on king throne as infantry guards of king and there is no doubt that Deylamids have been significant in Ghaznavid army<sup>12</sup>.

**Arabs and Kurds:** In most cases, Arabs and Kurds have been commanders in Ghaznavid army and also they had other important military functions. Iran's kingdom governments used to force Kurds and Arabs migrate from their birthplace in Zagros Mountains in order to defend Khorasan's boundaries.

Hence, they have been appeared in role of paid soldiers in most armies after Islam. Among them, just several independent dynasties were created in different regions of Islamic states<sup>13</sup>.

Arabs have been the best cavalries of Ghaznavid army, who were known as "demon riders". Arab commander in Ghaznavid army was Abdolah Mohammad Ibn Ibrahim Taei Al-Arabi. In 1018, when Khorezm was under attack, Arabs in Mahmud's army were under control of the mentioned commander. The Arabs used to attend in hard wars because of their temerity and agility. Arabs could create some immigrants in west and Khorasan in the first century and many of them remained also same fielders<sup>14</sup>. They were appeared through being employed in different armies and attending various wars in Khorasan region. Author of book "Hodood-ul Alam" has mentioned existence of 20 thousand Arabs in Gozganan. Amir Ismail, emir of Samanid dynasty has been killed by some Arabs in Ghare Ghom Desert. Masud Ghaznavid brought an Arab group, included 4 thousand people, as assistant force in his army. Beyhaghi has remembered the groups in Ghazni while writing his history<sup>15</sup>.

**Ghaznavid cavalry:** Cavalry has been significant in Islamic armies and Ghaznavids have not been any exception. Hence, due to role of cavalry in Ghaznavid army, providing horse and its preparation has been the most important issue. Some horsemen had two horses, which one of them were used to be applied for transferring food and equipments and sometimes after that first horse were tired; it could be applied as trailer horse. Caretaker of king stall was known as "emir of stall". Horses were used to be heated by special seals and court of nobles was responsible for inspecting horses and care about their food and health. In addition, the inspectors were responsible for inspecting special seals for heating king's horses<sup>16</sup>.

[The most well-known center of horse breeding in west Islamic region has been under control of Ghaznavid kings. West Indus River and Suleiman Mountains in Qandahar were the most important centers of horse breeding. Ghaznavids used to attend related jobs to cavalry such as producing leather belts and other well-designed products. Along with horse, camel was also applicable in Ghaznavid army. North parts of Khorasan and Baluchistan were the most important centers for camel breeding. Ghaznavids used to apply camels just for the portage purpose and just in a single war in 1040 "Dandanghan" they applied camels<sup>17</sup>.

**Infantry:** As it is clear, infantry in Samanid military system included a group of rural people, who had no valid war value, if they were brought by force. In Ghaznavid army, the most important epic part was under control of cavalry such as movements, ability to attack enemy, and fight and flight; although, infantry was valuable in war and overcoming enemy and infantries have been sometimes fixed in army. In addition to employing infantries in some emergency situations, local infantry could be applied. Finally, volunteer members from

Ghaznavid army, called "Ghazi", designed some adventurous movements toward India, which resulted to gathering many spoils. Some individuals, named Ghazi, were joined them from far distances. Their name was not entered in the court and they had no salary. In Mahmud's attack to Sumanat, 30 thousand volunteers were applied in his army and commander was a person named "Emir of Ghazis"<sup>18</sup>.

**Armaments and weapons of Ghaznavid army:** Individual weapons in Ghaznavid army have been same traditional weapons in Iran such as bow, mace, lance, javelin, and sword, which used to being applied by infantry. Infantry soldiers used to wear armor and carry metal shields. Cavalry was equipped also with some weapons such as battle ax, mace, and a kind of sword under name of "curved sword"<sup>19</sup>. Mentioned armaments have been traditional weapons of Iran, especially mace, which has been significantly considered in Shahnameh Ferdosi. Images of slaves of Ghaznavid kings on army walls of Ghazni bazaar indicate that the slaves have maces in their hands<sup>19</sup>. All Ghaznavid kings were skilled in applying certain kind of weapons; for example, Saboktekin has been powerful in applying sword, bow, and Ghalajur; Mahmud has been strong in applying bow and sword; and Masud has been skilled in applying mace.

Ghaznavid kings tended mostly using mace more than other weapons, which have been remembered in most references. According to statements of a Shabankareyi, Mahmud have had a mace with 270kg weight and he has been able to throw it to distance of 20gaz. One of the specific and important weapons of desert dwellers has been bow, in which they have been skillful. Bow and lasso, specified for Shabankareyis, has been applicable since old times in Iranian armies. The most important spoils for Ghaznavids, resulted from attacks to India, have been various. Among them, steel armor and sharp sword could be mentioned. However, every city and center of empire region has been known for producing certain kind of weapon; for example, Khorezm has been skillful in producing sword and a kind of bow<sup>20</sup>.

Kabul city and Ghor region have been well known because of their big iron mines and their ability to produce steel armors. For example, Masud in 1022 during his attack to Ghor, determined armaments as a tax for people and applied also experts for fence wars. Probably Ghaznavids have learnt application of catapult from the Ghorians.

There is no certain data available about fighting style of Ghaznavid army and just it seems that they are same common techniques in Islamic armies. According to available references, Saboktekin in his war against Indians has classified slaves in 500-pepeople groups and ordered them to attack constantly. In addition, Mahmud in one of his wars against Sistan, while blockading one of the forts, ordered to throw packets of snakes to fort by catapult<sup>21</sup>.

**Leader of army (Sepahsalar) and military ceremonies:** Salar in words means emir and pioneer of army and also it means as "compliant" elsewhere. In other words, court of leadership (Salari) is responsible for gathering army, regulating it, paying salary, and providing food. Importance of the job in Ghaznavid era has been after ministry of state. Main responsibility of court of leadership has been on bigleader (Salar). In local areas, also for purpose of regulating similar affairs, a Salar was selected in order to run the court. Accepting such position required official ability not military capability. Hence, mostly bureaucrat Iranians were responsible for these positions not Turk soldiers<sup>22</sup>.

Ghaznavid king used to test his armies in a region out of Ghazni, named Shah Bahar, which was extremely green region with excellent weather. Some references have considered Salari as military tradition of Sassanid era and have considered Zoroastrian Priest as a pioneer, who used to have meetings with lower individuals and then allow them to be employed. Hence, Salari is an element of hierarchy of ancient Iran armies and Ghaznavid army. In Ghaznavid army, sultan was responsible for controlling and supervising army. He was responsible also for counting soldiers and then their names were recorded in papers, which had a copy in court and another copy in mission court. The paper has been probably taken from Sassanid paper under title of Al-Soda<sup>23</sup>.

The leadership style of army has been similar to same Islamic style, in which leader used to stand on a high place, first left hand and then right hand soldiers used to start parading. After soldiers, leadership of officials was under consideration and mostly leader used to be careful about eavesdropping of spies and informers. Annual leadership used to be implemented usually in some ceremonies like holidays and celebrations. Following the ceremony, usually some parties were designed and cash payments were paid. Ibn Hoggolhas stated that: "Samanids used to pay salary of employers monthly" and Nezam-ol Molk believed also that the style has been applied and followed by Ghaznavids<sup>24</sup>.

In every state, governor has been responsible for salary and facilities of local people. Nezam-ol Molk states in Siasatnameh as follows: "A Meimand has been insisted on paying Altonash army from Ghazni court. This shows that, soldiers should be mostly committed to their leader no king of state (6, p.124). Nezam-ol Molk writs as follows: "Ghaznavids and Samanids used to present no apanage to their armies, but also they used to provide cash, food, and cloths for them". On the contrary, Bar Told believed that presented lands to Samijurian in Quhistan has been examples of feudalistic scores.

Clearly, Ghaznavids used to provide some apanages for their armies; for example, Saboktekin was forced to provide some modifications in order to solve abuses in this regard. A Shabankareyi has stated in a genealogy meeting that Saboktekinhas regulated their army and equipments, so that he

can remove irregularity. He has also stated on behalf of Saboktekin that actual and main duty of army and applying weapons, since affairs couldn't be organized through farming. It could be also because maybe Saboktekin had been so strong, so that he can remove Samanid dynasty and own centrality of government. Clearly, in Ghaznavid era, there has been a kind of land transmission (Bait); although, some resources such as Atabi and Beyhaghi have stated no words in this regard. Paying salaries of soldiers was easy, since Ghaznavids had access to Indians' wealth and Khorasan's taxes. Hence, it was a positive point for Ghaznavids against their competitors. In addition to their salary, soldiers were paid war spoils and after the war leader was responsible for evaluating the spoils. One fifth of total spoils, slaves, monies, and horses was for king, who had right to choose. Other remained spoils were distributed among soldiers. Some special awards were also presented to some armies, which have been their gift for braveness in war<sup>25</sup>.

**Statistics of soldiers:** Frequency of military forces, along with efficiency and epic power of army, as well as kind of weapons have been effective in power of kings and victory in wars. It means that, the more the number of soldiers was, the higher the possibility of their victory has been. Ghaznavid government has been mainly relied on military system. Although number of armies of Saboktekin has not been clear, occurrence of several wars such as attack to Afghanistan and India required huge military force. Armies of Sultan Mahmud, infantry and cavalry, have been estimated about 100thousand persons. Among resources of Ghaznavid era, those that have been mentioned by Beyhaghi and Gordizi, are so valid, since the two authors have been along with army in most wars. According to Gordizi, 54thousand horsemen and 130elephants became next to Shah Bahar. Statistics and numbers that Beyhaghi has presented in Masudera, are completely logical; for example, Masud had sent 4000 horsemen to Kerman in order to replace his assistance. In addition, he had 3000 horsemen in a war trip to Tabarestan; although, when arriving Amol and facing problems, he increased army to 8000 people<sup>26</sup>.

Similarly, Mahmud thought that 8000 soldiers are enough for a war trip. Enhancement of king armies was different based on significance of war trips. After1035 and while faced critical situation of Khorasan, Sultan Masud increased his forces to 17000 people and even 20000 people. Beyhaghihas stated that in 1038, about 40 thousand horsemen and infantry forces were prepared for king. However, during the last war, Sultan Masud has had about18000 forces or less and the exact number has not been clear. Clearly, Masud had a few number forces and his soldiers were depressed and inefficient.

Although there are several stations of Sultan in India, again his forces were fewer than the forces of his father. Hence, 30-40 thousand soldiers would be logical. However, due to different conditions of kings and significance of each war, the number has been upward or downward<sup>27</sup>.

## Conclusion

Slave of Turk commanders of Samanids, after success in forming a powerful government in Ghazni and through relying on local forces in Afghanistan and Iran, expanded the state gradually. They selected religious policy based on religious beliefs and became judge of court after removing their competitors in east and Iran. The more their power became and the more their wealth became after looting Indian resources, the more they needed making perfect political decisions based on militarism. Therefore, they organized a powerful army, which in addition to relying o forces of Turk slaves; they changed gradually into a multinational army composing of Turks, Indians, Arabs, and Deylamids. The army, because of distance between its elements was highly under trust of Ghaznavid kings. The organization included high capabilities in regard with weapons and optimal application of them, comparing to contemporaneous armies. The army was faced failue just when it had lost its trust and confidence against Seljuk army in 1040 because of inefficient policy making of Sultan Masud. Then the army became weaker and weaker as time was going.

## References

1. Ibn Hughol Abolghasem, Sovar Al-arz, trans. Dr. Jafar Shoar, *Tehran: Foundation of Culture, (1961)*
2. Abilfeda K Ismaeil, Taqvim Al-baladan, Cairo: Center of Religious Affairs, 6427, (2007)
3. Spuler Bertold, Iran in primary Islamic ages, trans. JavadFalaturi, Tehran: Science and Culture, (2007)
4. Bertold Vasili and Lodi Mirvich, history of Turkestan, trans. KarimKeshavarz, Tehran: Foundation of Culture, 2, (1973)
5. Bert old, History of mid Asia Turks, trans. Qafar Hosseini, Tehran: Toos publications, (1997)
6. Bosworth Clifford Edmond, History of Ghaznavids, trans. Hassan anousheh, Tehran: Amir Kabir publications, (1986)
7. Beyhaghi Abolfazl, Geyhaghi History, Tehran: Mahtab publications, (1994)
8. Jarfazqani Abu Sharaf, trans. Yamini History, Tehran: Translation and Publication center of books, (1978)
9. Zarinkoob Dr. Abdolhosein, , History of Iran After Islam Emergence, Tehran: Amir Kabir Publications, (1973)
10. Sanaei Ghaznavi Abolmajd, Divan-e Sanaei, Tehran: Tahoori Publications, 2535, (1973)
11. Shabankareyi Mohammad Ibn Ali, Majma-ulAnsab, in the efforts of MohaddesArmavi, Tehran: Amir Kabir publications, (1979)
12. Dr Safa Zabiollah, Iranian History of Literature, Tehran: Ghoghnoos publications, (1994)

13. Toosi Nezam-ol Molk, Siyasatnameh, second edition, Tehran: Asatiri publications, (1993)
14. Farrokhi Sistani, Abol Hassan Ali Ibn Juluq, Divan-e Farrokhi, Tehran: Safi Ali-shah, (1963)
15. Fry ran, History of Iran Cambridge, Vol.4, trans. Hassan Anusheh, Tehran: Amir Kabir publications, (1985)
16. Ghobadiani Naser Khosro, itinerary of Ahmad Ibrahim, Tehran: science and culture, (1985)
17. Christenson Arthur, Iran in Samanid era, trans. Rashid Yasemi, Tehran: IbnSina publications, (1972)
18. Gordizi Abdol Kay Ibn Zahak, Zin-olAkhbar, Tehran: World of Books, (1984)
19. MasudiAbol Hassan, Moravej-olZahab, trans. Abol Ghasem Payandeh, Tehran: translation and publication center, 2, (1981)
20. Dr. Moein Mohammad, Persian dictionary of Moein, sixth edition, Tehran: Amir Kabir Publications, (1984)
21. Manoochehridamghani, Ahmad Ibn Ghos, Divan-e Manoochehri, Tehran: Zavar publications, (1968)
22. Unknown author, History of Sistan, in efforts of Maleko Shoara Bahar, Tehran: KolaleKhavar, (1940)
23. Khadraoui A., Léonard M., Pham Thi TT. and Helfert M., A Framework for Compliance of Legacy Information Systems with Legal Aspect, *AIS Transactions on Enterprise Systems journal*, 1867-7134, GITO mbH, 15-26 (2009)
24. Rolland C., Parakash N. and Benjamen A., A multi Model view of Process Modelling, Springer, *Heidelberg*, 4(4) 169–187 (1999)
25. Cronbach L.J., Coefficient alpha and the internal structure of tests, *Psychometrika*, (16) 297–333 (1951)
26. Churchill G.A., A paradigm for developing better measures of marketing Constructs, *Journal of Marketing Research*, (16) 64–73 (1979)
27. Mehdi S. and Gholami Avati R., Investigating the Asymmetric Effects of Government Spending on Economic Growth, *Res. J. Recent Sci.*, 1(5), 51-58 (2012)