

Developing the aviation as a gate to open the world

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Abstract: According to the World Bank, Vietnam's aviation industry currently has the highest passenger growth in Southeast Asia. In particular, in the period of 2016-2021, Vietnam's aviation industry grew to double digits, up to 17.4%, nearly 3 times higher than the region's average growth rate. The International Air Transport Association (IATA) said that by the end of 2018, Vietnam is the fifth-fastest growing aviation market in the world, after China, the US, India and Indonesia. According to statistics of the Vietnam Aviation Administration, in 2018, the total aviation market of Vietnam reached 70.2 million passengers, up 12.8% over the same period. The growth rate of total passenger transport in the period of 2013-2018 reached a CAGR of 19%/year and the domestic market reached 18.4%/year. Meanwhile, the international market grew slightly, reaching 19.6%/year. Notably in these statistics is the domestic market share of Vietnamese airlines. According to the Aviation Department, Vietjet Air is leading, with 48.9% market share, quite far from its rival Vietnam Airlines, holding 39%. The statistics also show that since being on the market at the end of 2011, following the direction of cheap price, Vietjet's market share has been growing year by year.

Keywords: aviation, air transport, airports

1. Introduction

From the beginning of 2019, the Vietnamese aviation market has continuously received positive information such as the official operation of Bamboo Airways, Vietravel Tourism Company announced the establishment of the airline - Vietravel Airlines. In particular, the Vietnam Aviation Administration has just been granted the certificate of aviation safety supervision capacity level 1 (CAT 1) from the US Federal Aviation Administration to allow Vietnamese aviation enterprises to operate flight routes. straight to America. This forecasts that the aviation market in the future will be extremely exciting with many new impulses to develop. However, besides that there are also challenges associated with infrastructure, aviation services need to be quickly addressed. The second private airline after Vietjet, Bamboo Airways, was officially allowed to operate commercially from the beginning of 2019, giving people more choices when flying domestically, besides the three main airlines, Vietnam Airlines, Jetstar Pacific and Vietjet. According to aviation experts with the participation of Bamboo Airways, the aviation market will have many fluctuations in the future, the airlines will have to compete more strongly when passengers will be the first beneficiaries. quality of service and fares. Remember, when Vietjet low-cost airline started operating at the end of 2011, the domestic aviation market was almost over the page and the monopoly was broken. From a means of transport only for business people or high-income residents, nowadays, aviation has become popular, the opportunity to fly wide doors with all people thanks to low ticket prices. , sometimes even lower than tickets for cars and trains. Air transport is one of the key economic sectors that represent modern and advanced transport modes, plays an increasingly important role and plays an important role in the socio- society, security and defense of the country.

Launched in 1956, the aviation industry of Vietnam has made unceasing changes, meeting the transportation needs, serving the industrialization and modernization of the country, contributing to integrate our country with the background. world economy. On the other hand, the achievements of socio-economic development due to the Party's and State's policies have also facilitated the development of Vietnam's aviation industry. In line with the country's changing trend, Vietnam's aviation industry has shifted from a centrally planned and subsidized economy to a backward airliner fleet primarily owned by the Soviet Union. The airport was built many years ago, the equipment is poor management, patchwork, today Vietnam has achieved significant progress with the aircraft fleet is increasingly The infrastructure has been upgraded and improved, the organization and management model has been streamlined and the network of domestic and international flights has been expanded. Vietnam Airlines has achieved remarkable achievements in recent years, with increasing volume of transport not only in passenger transport but also in transportation of goods. The growth of the economy facilitates the growth of the air transport industry. The state will have more capital to invest in the development of infrastructure, means of transport such as airports, flight management systems, aircraft. According to the statistics of the Institute of Aviation Science, the average annual growth of 1%, followed by air transport increased 1.95%, of which passenger transport increased by 1.45% and freight transportation increased by 1.6%. At the same time the statistics of the World Trade Institute increased by 1% in the same time it increased by 0.8%, the number of passengers increased by 0.6% and the number of goods increased. 0.66%. Although the growth rate of aviation is lower due to ocean shipping, it also reflects the strong impact of the

world economy in general and the world trade in particular as well as its contribution to the aviation industry's growth.

However, in the context of the regional economy in particular and the world economy in general are facing many difficulties, Vietnam Airlines cannot avoid the ups and downs. On the other hand, in the context of competition in the global aviation market, the infrastructure, as well as the technology and technology of aviation in Vietnam, despite many efforts to improve, is still slower. much more than other countries in the region, making the competitiveness of Vietnamese airlines low. As a bridge linking Vietnam with other countries in the world as well as between regions in the country as well as an economic sector that provides a significant source of revenue for the country, Vietnam's aviation industry needs More effective solutions to meet the development requirements of the country's trade. Freight transportation makes it easier to carry out sales contracts. Especially for those countries that mainly export aquatic products, fresh products require fast transit time like our country, airlines play a very important role in developing trade with foreign countries. Today aviation in developed countries has become an indispensable means of transport not only in the field of passenger transport but also in the transport of goods between regions within a country. The development of air transport has paved the way for trade in particular countries and trade worldwide in general to be convenient and avoid more risk. Airfreight is the number one priority for international transportation of perishable, rotten, live animals, letters, vouchers, time sensitive items, emergency relief supplies, etc. Items require immediate delivery due to the speed of the airplane tens of times the speed of other means of transport. Through air transport, trade contracts for goods in this field thrive. On the other hand, airfreight is an important mode of transport, creating the possibility of combining modes of transport with each other such as air freight/sea transport, air transport car transport to exploit the advantages of modes of transport which make "transport time shorter than water transport time but freight is cheaper than air freight". With the advantage of its time, air transportation has contributed to the growth of trade activities among countries in the world. Air transport has a high level of safety due to the short transit time, the above roads are influenced by natural factors as well as people should avoid accidents, unexpected risks, eating theft. Transport equipment is more modern than other means of transportation. Therefore, airlines are the choice of high value, high value merchandise contracts.

Along with the positive effects, any fluctuation of the economy in general and trade in particular also directly affects the aviation industry. A good example is the economic crisis in Asia strongly impacting the economy of Vietnam in general and the air transport industry in particular. The level of market decline has been very severe since the fourth quarter of 1997 and continues to evolve in a bad direction in 1998 and early 1999. The worst crisis in the Southeast Asia market such as Thailand, Philippines, Malaysia is a key market area of Vietnam air transport. The depreciation of the currency of the currencies leads to a decline in the price of the dollar, so the revenue of the international markets in the countries is greatly reduced. Average sales in Korea, Taiwan decreased by 40-50%, Japan decreased by 15%, Hong Kong by 10%, Thailand by 40% compared to pre-crisis period. In Vietnam, because the currency devalued less than the currency with other countries in the region, prices in Vietnam are more expensive because the dong only devalued about 14% while other currencies devalued. This is a great challenge for Vietnamese air transport today. Moreover, currency devaluation also makes import activities of many countries are difficult, resulting in reduced imports led to the air cargo shipments in Asian countries plummeted.

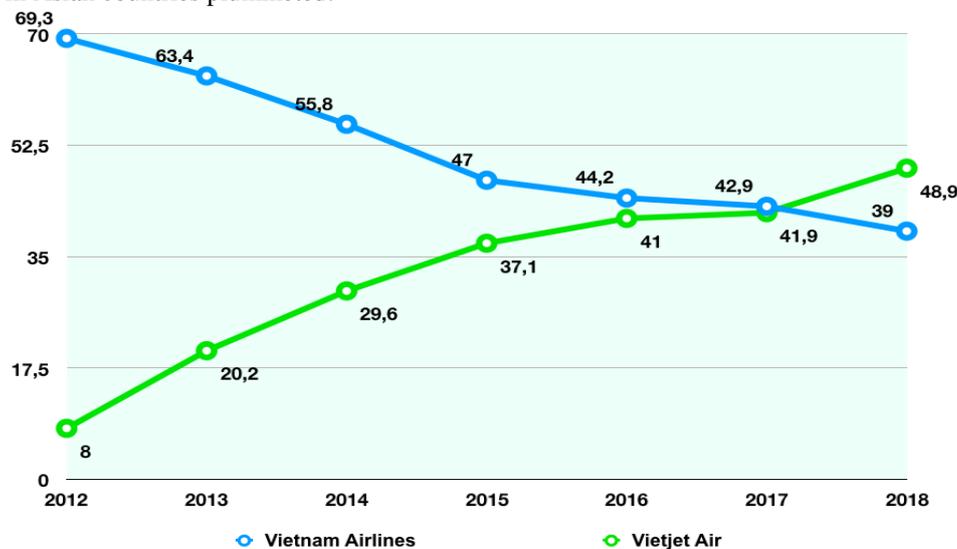
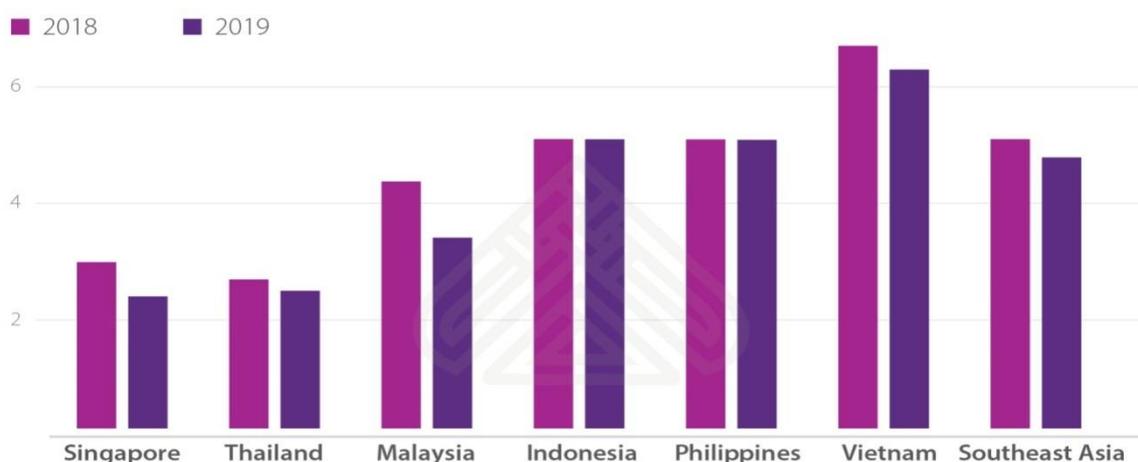


Figure 1. Domestic aviation market share

2. Overview of the world aviation market

In the context of increasingly open, deep integration into the regional and world economy, the fluctuation of the world market has increasingly impacted on the domestic market. Import and export is one of the most affected areas of the economic crisis spreading to our country. Typical airfreight items are significantly reduced. For example in Vietnam, during the decade 1989-1998 we have achieved great success in the development of export of many key products. However, there are also some items that export turnover in the past 10 years still stuck in place such as handicrafts, or have slowed down from 5, 6 years as peanuts. In addition, some processed meat items have been excluded from the main export items for a long time and the annual export volume is only one fifth compared to the record of 25 thousand tons in the first century. Textile and apparel market fell sharply. General view of textiles and garments has been our emerging export commodity since 1994 and has quickly surpassed USD 1 billion since 1996. In 1998, due to the depreciation of crude oil, the export turnover of this commodity climbed to the top position with 1.35 billion USD. However, the export of this commodity in 1998 was full of "waves". Overall, it was only in 1997 and is far less than 90% of the initial target of \$ 1.5 billion. The slowdown in exports of this commodity is due to the fact that exports to the non-quota market dropped sharply from \$ 900 million in 1997 to \$ 700 million. In the textile and garment export sector, we have had a fair amount of capital since the subsidy period, the footwear exports have only really flourished since 1995 with the annual growth rate of 242.75%, 178.81%, 182.08%. However, in 1998, in contrast to textiles and clothing exports, footwear and leather products were heavily dependent on foreign-invested enterprises, so the production of these firms was strongly affected by the crisis. The monetary and financial situation leading to the export turnover of this country is estimated to be only around the level of 1997. These are the items that need to be transported by air so its decline is also resulting in a dramatic reduction in airfreight. The Asian financial crisis has had a devastating effect on regional airlines, pushing some carriers to the brink of bankruptcy, forcing them to cancel many of their plane orders. which directly affected the western aircraft manufacturing corporations. In September 1998 the Asian crisis forced Philippine Airlines to shut down 13 days. Air (Indonesia) has been forced to stop operations in mid-1998. Thai Airways has canceled orders to buy 15 aircraft from two of the world's leading aircraft groups, Boeing and Airbus Industry International civil aviation has experienced nearly 80 years of development in modern history, is in a period of great development and becomes a strong community in which nations take turns to integrate and promote Develop your own and your community. The European Airline Association has announced that European airlines are up 12%, US airlines up 6%, Asia and the Middle East up 12.6%. In recent years, the average growth rate of world passenger traffic is 5.8% per year and is expected to fall to 4.9% between 2000 and 2014. Airfreight also increased. According to the long-term assessment, only the volume of goods transportation increased 6.6% per year. With the development of the civil aviation industry in the world, the Asia-Pacific region has the highest growth rate and is becoming an increasingly important aviation market. the most. The developed economic sectors make trading in the region and other regions more and more popular as the service and tourism industries grow. The number of tourists as well as cargo transported to this area and from this region to other countries in the world is increasing rapidly. This is a very favorable condition for the development of the air transport industry in this region.

Southeast Asia's GDP growth forecast (percent)



Source: Oxford Economics/Haver Analytics

Fig. 2. Forecast of aviation market

This forecast confirms the growing position of the regional aviation. However, in order to reach this goal, Asia-Pacific airlines need to make significant efforts. The depreciation of Asian currencies is a big factor for airlines as 80% of their costs are paid in US dollars. Some airlines have tried to convert their aircraft into US dollar revenue lines, but as a result of lower ticket prices, profits have declined. Strong regional airlines such as Singapore Airlines will eventually benefit from other operators cutting back on operations. The volume of cargoes has also declined, albeit not as severely as the number of passengers. Exports of high value Asian goods, the backbone of air transport, remain high. The financial and economic crisis caused great damage to the revenue and liberalization of airlines in the region. These airlines are highly equitized and employ a lot of labor, so they are sensitive to the rapid changes in the aviation market. Currencies are losing value. Challenges are now challenging Asia-Pacific airlines as a wake-up call for the need for radical and long-term changes in the management of airlines. Asia-Pacific airlines have created economic value, but over the past two years they have lost that value. In the past, they have chosen favorable markets for airlines and customers, creating a competitive edge based on economic incomes. Business travelers who are willing to accept high rates once accounted for a high percentage of total passengers are now subject to very sensitive passenger rates. Privatization and liberalization have contributed to opening the sky and increasing competition in value, reducing business profits.

According to statistics from the US International Travel Agency during five years of operations of airlines from elsewhere to the US and from the United States to other destinations on the transpacific routes accounted for 33% of Total transport market share and higher than 10% over the transatlantic market. The rapid growth of the air transport sector in this region is first of all to mention the significant role and contribution of Asian airlines and then to American airlines.

3. Vietnamese aviation market

According to statistics from the Vietnam Civil Aviation Administration, by 2016, an estimated 52.2 million passengers have chosen air routes, an increase of more than 29% over 2015, with domestic passenger traffic increasing to 28 million, up 30% from 2015. Currently, the domestic market segment is shared by four airlines, of which 87% are owned by Vietnam Airlines and Vietjet Air. Trends in low-cost flights are growing rapidly as there are up to 15 million passengers using low-cost airlines in 2016, accounting for nearly 55% of total passenger traffic on domestic routes. On the international routes, 2016 also saw the boom of both domestic and foreign airlines. Overall, more than 52 foreign airlines from 28 countries and territories operate 78 flights to and from Vietnam. Domestic airlines have also exploited more new routes to increase market share and are willing to accept competition from foreign carriers. The International Air Transport Association (IATA) statement published in 2015 is Vietnam's aviation market ranked 7th globally in terms of growth in the period 2014-2017. The success of the sales of the aviation market in Vietnam comes from a variety of factors, including the development of the tourism industry, the opening up of borders between nations, the development of a stable economy, the contribution of cheap airlines. By the end of November, 2016, Vietnamese airlines use nearly 150 aircraft for transport, up 10% from 2015. According to the draft strategy of development of air cargo and aircraft In the period from 2016-2020, the number of aircraft operated by domestic airlines will reach 230. However, with the growth rate has reached over 20% in the last three years, if only increase 80 aircraft in four years may not be enough to meet the actual needs in the coming time.

The aviation market in Vietnam in recent years has witnessed strong growth, both in terms of passenger numbers and aircraft numbers. The forecasts of international aviation organizations show that Vietnam is a country with high potential aviation markets. Although the aviation picture is bright, the fast growth is still facing many difficulties. The aviation market in the period to 2035, Chief Economist of the International Air Transport Association (IATA) Brian said that Vietnam is in the group of five markets with growth the highest in the world, after China, the United States, India, Indonesia. Economists say the rapid growth of the aviation market has fueled strong growth in the global travel, trade and investment sectors over the years. Although the aviation scene is bright, this "hot" growth has to face the downside, which is the threat to safety and security on the flight; Overloaded infrastructure, airports. In particular, the entry of new model airlines may pose a risk from the "non-regulatory" competition, especially in areas where there is a nascent stock market, regulatory regulations are not strong enough. to monitor the transparency of market information. This may adversely affect the long-term development of the aviation industry.

According to the assessment, the "hot" growth of the aviation market has contributed significantly to the low cost of aviation, which grasped the needs of the greater part of the public, who previously had no plane conditions. Similar to other businesses, discounting fares and increasing the number of planes is a quick way to dominate the market, especially in densely populated areas and the number of flights is not high. . This leads to fierce price competition, which causes businesses to sink into losses, eliminate each other and avoid the risk of long-term consequences for the economy. The result of price competition is "a business goes bankrupt, a weak

business exists." Consumer psychology, after a period of forming the habit of buying cheap tickets, even the price below the cost often difficult to accept the business increase. When businesses increase ticket prices to make their business survive, not only will consumers lose, the competitiveness of the aviation industry will weaken in the international market and damage the whole economy. . Indian aviation, the nation with the second largest population in the world, has been a major player in aviation development. About three years ago, due to the consequences of the price race, a number of airlines in India went bankrupt. The remaining firms are struggling to survive. It is worth mentioning, with the "hot" growth and the start of price competition, Kingfisher's private airline has declared bankruptcy. Indian government has taken measures to help Spice Jet Airlines - India's third largest airline. The race to market shares has prevented firms from raising prices. Even Air India, India's national airline, has fallen into financial bailouts.

According to the International Air Transport Association (IATA), aviation in the Asia-Pacific region brings 33 million jobs and contributes \$ 700 billion to regional GDP. Over the next 30 years, the industry is expected to generate 70 million jobs and \$ 1.3 trillion. "If we can tap into the potential of this industry, it will create jobs and contribute to the economy," said Tony Tyler, CEO and CEO of IATA. Therefore, international experts said that Vietnam's 2nd position in Southeast Asia in terms of growth at 17% in 2015 and higher in 2016 is really an opportunity for development to catch up. And if the actual needs of passengers are increasing, if not timely take advantage, domestic airlines may lose on the ground itself.

In fact, despite double the number of domestic passengers in just three years thanks to the explosion of Vietjet and is now able to rise to No. 3 area but now the quality and size of the aircraft fleet of Vietnam still far from your countries. According to the Asia-Pacific Regional Center for Aeronautical Studies (CAPA), until November 2016, the total number of Vietnamese aircraft in operation was just 142, ranking sixth in the region. , about one fourth of Indonesian aircraft. Therefore, experts say that the expansion of the fleet is inevitable. Strongly boosting the domestic market, but in the first 6 months of 2016, the international passenger market share of Vietnamese airlines dropped sharply by 6 points to 43.3% Some of the larger firms have more commercial rights than the Vietnamese market. This is a warning cannot be ignored with domestic airlines because if domestic airlines such as Vietnam Airlines, Vietjet does not maintain the growth rate of aircraft fleet, it is likely that the market share of passenger transport will fall into hand airlines foreign airlines.

However, despite the potential, domestic airlines are having difficulty in developing the fleet due to lack of overnight parking at some major airports. In addition to the difficult infrastructure, domestic airlines also risk the "team" business costs trillions of dong if a variety of mining fees are adjusted. Experts say that concerns about the rapid growth of the airline market and the need to raise fees to hold back are unfounded, given the fact that Vietnam's annual growth rate of approximately 20%, 27% of Thailand, 30% of China, while the demand for travel, trade and tourism of the people increased sharply in the past years is real. Therefore, instead of restraint, it is necessary to encourage domestic firms to develop a reasonable fare policy, attracting many passengers by air. In addition to building a transparent and equitable business environment, it is imperative that efforts be made to accelerate the development of infrastructure projects in Tan Son Nhat and Long Thanh.

Aviation development is not simply about making a better plane, but also of a related operational system such as airport construction, the connection between airports, airplanes, air routes, air traffic control area, where aircraft fly from one country to another, this market or another market. Another point, as air travel becomes more comfortable, requires that countries in the region need seamless, interconnected development. For example, Honeywell is providing Shanghai Airport SmartPath systems as well as building and developing services for the two newest airports in Myanmar. Shanghai is one of the world's busiest airports, while Myanmar is a new and smaller airport. Currently, looking at the efforts of airlines such as Vietnam Airlines, or Vietjet Air and the ambitious plan of the Government of Vietnam to expand and build the new airport system, the future of Vietnam Airlines Nam is very open. As a young airline, just established in 2007, but VietJet Air has very quickly developed. So far this has transported nearly 8 million passengers, of which about 2 million people have never been on the plane. The aviation development of Vietnam is very potential, especially in recent time, has continued to choose the most modern aircraft today, such as Boeing 777, Airbus A330, Airbus A321. In addition, Vietnamese airlines invest in technology to provide the safest, most efficient fleet solution. For example, satellite navigation equipment in addition to navigation capabilities can also warn of potential accidents in the pilot's compartment or air navigation system, ensuring safe flight operations the most. In the first 11 months of 2016, Vietnamese airlines made more than 228,000 flights, an increase of 37,000, up 19% over the same period last year, but mostly domestic flights. With no competition from foreign competitors, domestic airlines have exploited the potential of the domestic market by adding more airplanes, expanding many new airfreight segments and launching many stimulus program. Both low cost carriers Jetstar Pacific and Vietjet Air have increased the number of domestic routes to 50, linking the airports in the three largest cities with 17 airports. However, in the international flight segment, Vietnamese airlines are confronted with fierce competition as the trend of opening up the sky is gradually being realized by multilateral agreements. Having

the opportunity to develop precious but Vietnam airlines will also have to overcome many new challenges if they want to maintain domestic market share as well as international reach.

4. Conclusion

One of the limitations of Vietnam's aviation industry is the infrastructure that is still in the process of being completed. However, these weaknesses can be partly overcome through the application of the most modern aviation technologies, but are operated in accordance with the conditions of the airport and people of Vietnam. In addition, some airlines choose the option of using an auxiliary engine for the aircraft. The auxiliary power supply provides the main or backup power for the cockpit and hydraulics during the flight. During the flight, the auxiliary engine also helps the aircraft use less fuel, resulting in better performance of the aircraft as well as reduced CO₂ emissions. An airport at the same time has several dozen aircraft up and down, if there is trouble, no one can speak in advance about the consequences. The recent incidents of Vietnamese airlines, such as wrong button clickers, power outages, air traffic control stations are lessons for airport managers. They should soon be thinking of giving immediate technological solutions to these issues, ensuring safe flight control. Applying technology as well as having a troubleshooting plan is very important. For example, the SmartPath system that supports air traffic control is a technology that uses very little power. When a power failure occurs, the backup battery system can run for 5 to 6 hours, enough to handle the problem. Even with a spare battery, only a small generator can continue to support the SmartPath system to continue operating normally, ensuring a safe, uninterrupted operation. The recent deal of the airlines of Vietnam shows the recognition as well as the determination to apply the latest aviation technology of leaders of Vietnam airlines is very high. It is more important for them to understand the importance of applying a uniform system from the airport to the aviation infrastructure to the associated service.

5. References

- [1] ADAMS. 1994–1999. Human factors in aircraft dispatch and maintenance, Brussels: European Commission. Under the EU BRITE-EURAM Programme. Contract No. BRPR-CT95–0038, Project No. BE95–1732.
- [2] ADAMS. Human factors in aircraft dispatch and maintenance. Programme for Industrial Materials and Technology. Project No. GRD1–2000–25751. Brussels. European Commission. Under the EU BRITE-EURAM III Programme for Industrial Materials and Technology. Project No. GRD1–2000–25751.
- [3] Air Safety Week. 2004. Space agency seeks safety culture change, Rockville, MD: Access Intelligence, LLC. 3 May, 2004.
- [4] Air Transport Association. 2007. MSG-3 process operator/manufacturer scheduled maintenance development, Washington, DC: ATA Publications.
- [5] Akselsson, R. . Resilience safety culture. paper presented at the International Ergonomics Association Conference. August 2009, Beijing.
- [6] AMPOS. 1999–2001. Aircraft maintenance procedure optimisation system, Brussels: European Commission. Under the EU ESPRIT Programme. Project No. 29053
- [7] Baranzini, D. 2009. Aircraft maintenance teams Thesis (Doctoral). Trinity College Dublin
- [8] Bunderath, M. . The operational impact to the maintainer (ground crew support and human factors). Aircraft health Management for New operational and Enterprise solutions proceedings. June 15–16 2008, London, England. The Institution of Engineering and Technology (IET).
- [9] Coghlan, D. 2002. Putting 'research' back into OD and action research: A call to OD practitioners. Organisational Development Journal, 20(1): 61–65.
- [10] Coghlan, D. and Brannick, T. 2001. Doing action research in your own organisation, London: Sage.