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## **TOWARDS A BETTER POLICY FOR AIRLINE PASSENGERS WITH REDUCED MOBILITY**

**Summary.** Persons with reduced mobility (PRM) should enjoy the same rights as other people in all life aspects, including in terms of travel experience. PRM group is an undeveloped travel market segment, having specific needs that the aviation organizations should satisfy. The facilitation of air travel for PRM should be supported by, among others, clear standards and appropriate regulations and laws. The present study focuses on the European Union (EU) and ASEAN regulatory framework for PRM, presenting various issues and suggesting improvements. The paper is theoretical in nature. It compares various regulations and laws that are implemented in the two Regions, and from thereafter suggestions

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are generated. The study shows that the European Union has a more efficient regulatory framework that better responds to the transportation chain and the needs of the various groups of PRM. The ASEAN Region can adopt some functional regulations and practices from the European Region. Also, the emphasis should be moved from persons with disabilities to PRM accompanied by the necessary rules, mainly from the ASEAN side. PRM makes up a significant potential market segment in aviation and relevant studies will be beneficial. The study provides significant insights for the aviation industry, particularly for these two Regions, the various groups of PRM, and the policymakers.

**Keywords:** persons with reduced mobility (PRM), aviation industry, aviation regulations, European aviation, ASEAN aviation, persons with disabilities (PWD)

## 1. INTRODUCTION

Persons with reduced mobility (PRM) are people with temporary and permanent illnesses, people with pathological conditions and allergies, people with 'hidden impairments', young children (up to 4 years old), and those with a lack of ability to read or understand spoken or written local languages [1]. In addition, this group includes senior citizens aged 65 and above, pregnant women in the last weeks of pregnancy, persons with uncommon physical dimensions, people with arthritis, asthma, heart problems, etc. [2].

On a global level, over a billion people (or 1 in 7 people) face some form of disability, and 110-190 million adults have significant difficulties in functioning. In addition, it is estimated over 20% of the global population will be over the age of 65 by 2050. These figures are continuously increasing, and the trend is associated with aging, obesity, and medical needs [3, 4]. Some of the above-mentioned subgroups, such as people with severe disabilities, significantly older people, and young children, need escorts to travel, and summarizing all of them, they account for about 40% of the population [1]. Therefore, PRM are a significant part of the world population. Improvements of accessibility for PRM will increase the tourism market value by 44%, which means a potential of €142 billion of annual expansion; 3.4 million more jobs will be generated; excellent prospects to the extent of the tourism period through special packages for seniors and PWD; and the new, more accessible services will benefit all travelers [1] as well as the aviation industry itself.

The current study is focused on the European Union (EU) and Association of South East Asia Nations (ASEAN), two Regions that are at the forefront of the aviation industry. In 2019, the last fruitful year for aviation, the EU carriers served 1,036 million passengers [5], and the ASEAN Region carriers served 640.8 million passengers [6, 7]. Both Regions present excellent prospects in aviation (the growth of aviation traffic in the last years is 6% on annual basis for the EU and 10% for the ASEAN Region) [8, 9]. In addition, demographics are important for aviation. The ASEAN Region covers a population of 653.9 million people, larger than the EU (447 million) and the USA plus Canada (367 million) [10].

Consequently, it is estimated that 300-400 million (about 30%-40% of the total population) inhabitants belong to the PRM category, including their escorts, in both Regions. States should cater to their needs, offering the appropriate services. Some of them travel, but most of them will travel more if the required services are available. Aviation should sufficiently accommodate their needs and facilitate their transportation.

A contributory issue towards this is the formulation and the implementation of the appropriate regulations and laws. A stable and predictable regulatory framework is required to

facilitate efficient investment and sustainable growth, and should focus on improving service quality for business and individual consumers [11]. Also, in recent years there has been a trend towards regulation by supranational bodies, which develop oversight mechanisms that monitor the quality or effectiveness of public services at the local level (multi-level character of regulation) [12]. International organizations (IOs), Regions, governments, and local regulators should closely cooperate in formulating and applying those regulations that primarily benefit/protect citizens. A facilitative and efficient regulatory framework will help the PRM, the aviation industry, and the global economy. In the examined case, the United Nations (UN) and international aviation organizations (ICAO, IATA, and ACI) provide a regulatory framework that emphasizes more for PWD and less for PRM. The current study is focused on the regulatory framework of PRM travel in the EU and ASEAN Regions. Both Regions provide regulations and laws that serve the PRM's transportation. The study's objective is to present the regulatory framework at all levels (international, regional, national), compare, discuss and suggest issues that will improve the situation in both Regions. The EU Region seems to have more efficient regulations and laws covering all the aspects of the traveling experience of the PRM compared to the ASEAN Region.

Some issues (regulations and practices) in the EU Region can be adopted in the ASEAN Region, although each Region has particular characteristics in their customs and aviation industry. The reader of the current study acquires a valuable holistic knowledge of the regulatory framework for PRM in the EU and ASEAN Regions. The study also offers valuable insights for policymakers, aviation industry participants, and PRM groups.

The current study is based on a comprehensive review of the relevant internet sources and literature review.

## **2. THE INTERNATIONAL REGULATORY FRAMEWORK**

### **2.1. The global framework**

All involved stakeholders in air transport, such as airports, airlines, ground handlers, must adopt the regulations that international and national bodies suggest.

At the global stage, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which came into force on May 3rd, 2008, is set as the general standards to which Regions and countries worldwide adjust their conditions. The purpose of the Convention is to promote, protect, and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all PWD and promote respect for their inherent dignity (Article 1). The Convention contains 50 Articles that concern all the main issues for PWD, while Article 9 focuses on the: a) physical accessibility, b) service accessibility, and c) accessibility to information and communications technology (ICT). The Convention pointed out the need for training, capacity building, awareness-raising, good practices collection and validation, knowledge management, the inclusion of disability in all developmental activities, the implementation of the Convention principles in the internal operations of organizations, and the inclusion of PWD in all stages of implementation and created capacity of organizations of persons to do so [13].

In the aviation area, the International Civil Aviation Organisation (ICAO) in Annex 9, Part H provides valuable insights, suggesting recommended practices for the States to assist PWD by improving their accessibility in airports and air services. In particular, Part H contains i) general issues (such as the extraordinary assistance that should be provided, the cooperation between contracting states to improve accessibility in all elements of the chain of the person's

journey, the establishment and publicity of the minimum uniform standards of accessibility through the aircraft, airport and ground handling operators, provision of the appropriate information, establishment and coordination of the appropriate training programs), ii) access to airports (improved airport facilities and services which should respond to PWD specific needs), and iii) access to air services in equivalent basis (the provision of uniform standards of accessibility in case of new aircraft or those with significant refurbishment, issues concerning the free of charge transportation of disability aids and service animals in the cabin accompanying PWD, and should allow PWD to determine whether or not they need an assistant to travel with them with low fares, aircraft operators should require an assistant to travel when it is clear that PWD are not able to travel alone and advance notice is recommended where assistance or lifting is required) [14]. Furthermore, ICAO Doc 9984, or the Manual on Access to Air Transport by PWD, provides general guidance on services and features needed to meet the needs of PWD and improve their air transportation experience. Additionally, airports and aircraft operators, including ground handlers, should ensure that boarding equipment contributing to the safe and dignified boarding and disembarking of PWD is available at a terminal [15].

The International Air Transport Association (IATA) aims to protect the rights of PWD, contribute to the establishment of standards for airline service, and offer high-quality training in the implementation of Resolution 700 (Acceptance and Carriage of Incapacitated Passengers), which was first adopted in 1952. Through this Resolution, incapacitated persons are given a higher chance to travel by air, while the IATA members recognize the need to follow standard conditions for the travel of these persons and facilitate their acceptance, handling, and carriage on interline journeys, as well as providing helpful information concerning reservation and ticketing procedures [16].

Airport Council International (ACI) launched the 5th Edition of Airports & Persons with Disabilities Handbook, which was written under the guidance of ICAO (Doc. 9984) and the UNCRDP, intending to promote “*the accessibility of air travel for persons with disabilities, including those with reduced mobility*”. It acknowledges that travel for PWD continues to involve unnecessary barriers, some of which can be easily prevented. Ultimately, the recommendations and guidance provided in the handbook are expected to set a certain standard in designing friendly facilities for PWD in airports worldwide and upgrade the existing ones. The handbook also seeks to ensure that the flow of travel – including but not limited to check-in, immigration and customs, security clearance, departure, and arrival – shall not impede PWD and PRM [17].

Consequently, UN and international aviation organizations (ICAO, IATA, and ACI) provide useful guidelines for the facilitation of PWD transport. In addition, the Regions through their regulations and laws extend further these guidelines to serve better the needs of this passenger segment.

## **2.2. The European Union (EU) and ASEAN frameworks**

EU and ASEAN, two Regions that play a vital role in the air transport industry, could set up a certain standard in the playing field to offer high-quality services to PRM.

### **The EU framework**

There is an increasing need for harmonized assessment of disability status within the EU. Not every Member States has its specific policy and practice, thus comparing the ‘levels of disability’ across the EU and drawing clear conclusions from statistics is not an easy task [1].

At the first stage, the Governments are required to set up a national organization to monitor the implementation of the UNCRPD. The EU Human Rights Commission will observe the development of its implementation among the Member States [18]. The European Commission's European Disability Strategy 2010-2020 consisted of an active policy tool to implement the UNCRPD. However, it does not concern any specific transport mode and includes legislative action, technical prescriptions, and training. Member States should focus on particular targets for PWD in their National Reform Programs [19].

The White Paper "*Roadmap to a Single European Transport Area –Towards a competitive and resource-efficient transport system*" discusses the future of European transport and the improvement of the quality of transportation, with particular emphasis on the progress of the accessibility of transport for elderly people, disabled passengers and other groups of PRM [20].

Regarding the accessibility requirements for products and services, EU members implement the European Accessibility Act (EAA) to harmonize the fragmented national laws on accessibility to fully implement the UNCRPD. The EAA concerns all transport modes and influences approximately 80 million European citizens with disability, handicap, or reduced mobility. Its purpose is to improve the EU Single Market for accessible products and services, ranging from ICT to banking services and transport. Ticketing machines in metro stations, hotels websites, smart ticketing, electronic ticketing, and their compatibility with assistive devices are some of the necessary functions EAA includes [21]. In addition, the Directive (EU) 2016/2102 focuses on the accessibility of websites and mobile applications of public sector bodies, and those should become more accessible by making them perceivable, operable, understandable, and robust [22].

The Connecting Europe Facility (CEF) is a key EU funding instrument focused on investment into European transport, energy, and digital infrastructures to address identified missing links and bottlenecks and includes the improvement of accessibility for PRM [23].

The Commission also supports disseminating knowledge through the Academic Network of European Disability (ANED) experts, which provides helpful feedback, analysis of national situations, policies, and data [24].

Monitoring the passenger/PWD complaints can provide useful feedback to improve the offered services. The role of National Enforcement Bodies (NEBs) is essential, and particular emphasis should be placed on increasing the awareness of their existence [1]. Passengers who believe that their statutory rights have not been respected should contact the Country's NEBs where the incident took place. The EU obliges the Member States to nominate or create NEBs, whose role is to verify that transport operators treat all passengers by their rights without discrimination [25].

Regulation 1107/2006 concerning the rights of PRM when traveling by air is critical for aviation. PWD view this Regulation as an essential step forward [1]. According to this Regulation, PRM have the same rights as all other passengers in the aircraft transportations. This Regulation concerns all airports with annual traffic exceeding 150,000 passengers and applies to PRM using or intending to use commercial passenger air services which depart from, transit through, or arrive at an airport situated in a Member State of the EU (Article 1, Paragraph 2), and the assistance offered to those passengers departing from a third country to an airport situated in the EU if the flight is operated by an EU carrier (Article 1, Paragraph 3). A designated point at the airport must be defined. Through this, the necessary assistance to PRM should be provided independently of the means of transport they have selected to arrive (Article 7). This assistance should not incur any cost for passengers. The service offered by airport managers is financed by a levy on the airlines, proportionate to their total number of passengers (Article 8). The main aim of the Regulation is the prevention of refusal of carriage (Article 3).

The assistance is provided by persons/staff with sufficient awareness and training (Article 11). The provisions to those passengers are subject to the limitation on the grounds of safety (Article 4), and this Article contains issues regarding derogations, special requirements, and relevant information. Airlines are responsible for assisting the board of aircraft (Article 10 and Annex II), and airport managers are responsible for helping them at the airport (Article 7 and Annex I). These passengers are entitled to compensation if their mobility equipment or assistive devices are damaged (Article 12). The Member States must establish a monitoring body to improve implementation of the Regulation [26].

The introduction of the Interpretive Guidebook, adopted by the EU, facilitates the Regulation's (1107/2006) implementation and eliminates incurring confusions [27]. Varney [28] pointed out that the particular Regulation is characterized by the lack of framework for the quality of citizenship rights and human dignity of these persons, and due to these issues, some barriers are likely to remain. Ridanovic [27] focuses his critique on the following issues: a) the imprecision of the definition of a PRM passenger and how this caused some diversification problems of the Regulation implementation, b) the insufficient awareness of PRM passengers and tour operators about these persons' rights, c) the handling of complaints and the decisions; deadlines, and d) the relevant training which is provided to all airport operators and airline employees who are in contact with PRM passengers and its duration. Steer Davies Gleave [29] suggested that more significant revisions be considered in the longer term, and these would require consultation with all stakeholders and an impact assessment to be undertaken.

In addition, in the next years, workshops and discussions with experts occurred to update the Regulation 1107/2006. The European Commission published interpretative guidelines based on the relevant passengers' complaints collected through NEBs, and questions raised by the members of the European Parliament, following the discussions with organizations representing disabled persons, other PRM categories, airports and air carriers [30].

Compensations issues are stipulated in EU Regulation No 261/2004. This is based on the Montreal Convention; however, there is no specific mention of PRM, although there are relevant proposals [22].

The European Civil Aviation Conference (ECAC) Doc No 30 includes a dedicated part (section 5) about the facilitation of the transport of PWD and other PRM groups and stresses issues such as the categories of passengers needing special assistance, prevention of refusal of carriage, designation of points of arrival and departure, transmission of information, aid at airports, training, compensation issues, enforcement body and its tasks, complaint procedures and penalties [31]. The ECAC includes a subgroup of experts that works for the facilitation of the transport of PRM and comprises delegates from the ECAC Member States, observers from the European Commission, European Aviation Safety Agency (EASA), disability organizations (European Disability Forum), organizations representing air carriers (AEA, ELFAA, ERA, IACA, IATA), crew (ECA, IFALPA), airports (ACI-Europe) and tour operators (ECTAA). The subgroup ensures that Doc 30 Recommendations (Section 5 and related Annexes) are entirely consistent with the Regulation (1107/2006). Annexes to Doc 30 provide guidance and best practices to assist in implementing the Recommendations of the Doc. The United States, with which the subgroup holds regular coordination meetings, is invited ad hoc to the plenary sessions [32].

Finally, the Directive 2010/40/EU for multimodal transportation (road transportation and the interface with other modes of transport) proposed higher accessibility and services using Intelligent Transport Systems in order PWD or PRM to have high-quality services by the whole chain of transportation [33].

The laws and regulations mentioned above significantly contribute to the European aviation industry. At the center is Regulation 1107/2006, and the other initiatives presented above complement the Regulation and all contribute to the facilitation of PRM travel.

### **The ASEAN framework**

The promotion of collaboration and mutual assistance on issues of common interest for member countries in the economic, social, cultural, technical, scientific, and administrative fields and specific on transportation and communication sectors are some of the main targets of the ASEAN [34].

In January 2015, the ASEAN Open Skies policy was implemented to integrate and boost the air transport market, allowing airlines to fly freely throughout ASEAN in a single, unified air transport market [10]. However, the recent pandemic showed the lack of appropriate policies, such as the implementation of ‘travel bubbles’, uniform standards, and policies to better face the incurred problems [10].

It shall be noted that the industry growth does not guarantee a better regulatory framework. ASEAN is known for its “ASEAN Way”, which is more than just the official anthem of the association itself – but it is also a philosophy that the Member States live by. Instead of establishing a rigid regulatory system, ASEAN adheres to the evolutionary approach, relying mainly on patient consensus-building to arrive at informal understandings or loose agreements. Meaning that ASEAN does not, and probably will not, have a set of Regulation or directives like the EU does. The Member States’ jurisdictional right is always a top priority, making the enforcement of agreements entirely depends on their will and how relevant these are to their interests.

The Region has established the ASEAN Disability Forum, a network composed of Organizations of Persons with Disabilities (DPO) from all around the Member States. The forum provides a platform to raise awareness. It carries the voice of DPOs at the grassroots level to policymakers, since the concerns raised by the relevant conference are brought to the ASEAN leaders’ attention through the ASEAN Summit [35].

The ASEAN Enabling Masterplan 2025: Mainstreaming the Rights of Persons with Disabilities [36] is a proof of commitment toward the UNCRPD, ratified by all ASEAN Member States as per 2016. The Masterplan was formulated by the ASEAN Ministerial Meeting on Social Welfare and Development, the ASEAN Intergovernmental Commission on Human Rights, and the ASEAN Commission on the Promotion and Protection of the Rights of Women and Children. The Deputies Secretary-General for ASEAN Political-Security Community, ASEAN Economic Community, ASEAN Socio-Cultural Community, and the ASEAN Secretariat were also consulted during the process to ensure cohesive and thorough implementation of the UNCRPD in line with the values of ASEAN.

The basic laws and regulations on PWD and other groups of PRM for the most prominent countries of the ASEAN Region are presented below.

### **Indonesia**

Government Regulation No. 52 of 2019 on Implementation of Social Welfare for Persons with Disabilities and Law No. 8 of 2016 on Persons with Disabilities are focused on these passengers traveling experience. In addition, Law No. 1 of 2009 on Aviation describes the provided services for the transportation of the disabled, elderly, children under 12 (twelve) years of age, and sick people. The ‘special treatment and facilities’ provided by the air transport business entity in all stages of trip (Article 134) and airport business entity or airport operation unit (Article 239) are described. Chapter VI of Regulation 185 of 2015 sets the Standard of

Service for Passengers with Special Needs. In particular, Section One describes the provided services for infants, children under six years old, children traveling unaccompanied aged 6 up to 12 years, escort of older people, pregnant women, passengers requiring bottled oxygen and stretcher (Article 42), passengers with manual wheelchairs, baby carriages, personal walkers, and guide dogs placed as checked baggage at no charge (Article 43). Finally, services offered in pre-flight (Part 2), in-flight (Part 3), and post-flight (Part 4) stages are highlighted [37].

### **Malaysia**

Malaysia's relevant regulations mainly focus on disabled people and not PRM. Malaysian Aviation Consumer Protection Code (MACPC) 2016, as amended by MACPC 2019, clearly mentioned that there shall be non-discrimination of PWD. Article 9 of MACPC stipulates, among others, that an airline cannot refuse to accept reservations from PWD (Paragraph 1) except for safety reasons and in cases the aircraft size and aircraft doors create problems for the PWD embarkation (Paragraph 2). In addition, it includes the fulfilment of safety requirements (Paragraph 3, 6, 9, and 10), provision of all necessary information in an accessible way (Paragraph 7), former announcement in the case of refusal and the reasons for non-acceptance within five working days (Paragraph 8), assistance at aerodromes (Paragraphs 13 and 14), assistance by the operating airline employees (Paragraphs 15,16,17) and the provided services by aerodrome operators (Paragraphs 18 and 19) [38, 39].

### **Vietnam**

According to Vietnam Initial State Report [40] on the implementation of UNCRPD, all Vietnamese carriers follow specific regulations to support PWD' travel experience. Their airplanes meet international standards and are convenient for PWD, using the appropriate equipment such as elevators and wheelchairs to support their transportation on the ground and on board. The airports offer ramps for wheelchair users and accessible toilets (Article 9 – Paragraph 58). In addition, specific standards are followed to allow and assist PWD in accessing and using information and communication technologies (ICT) (TVCN 8701:2011) (Article 9 – Paragraph 60 & Circular No. 28/2009/TT-BTTTT) [41]. Specific Circular (No. 39/2012/TT-BGTVT) [42] suggests the infrastructures mentioned above (Article 3), assistance (Article 4), and priority policies (Article 5) that facilitate the transportation of PWD with public transport. At the same time, Vietnam Airlines provides specific services for infants and children, unaccompanied minors, PWD, pregnant passengers, and extra seats for oversized passengers and passengers with specific medical conditions (oxygen, stretcher, etc.) [43].

### **Thailand**

Although it has vast traffic and lack of accessibility in the public transport, the capital city of Bangkok is in a better position compared with the other 76 Country's Provinces [44]. Suppose an unaccompanied child is less than 12 years old, PWD, or a person who is unable to assist himself in travel, then the carriers must provide services and exceptional care according to international practice without charging any additional fee. In cases of denied boarding, flight cancelation, and delayed flight regardless of time, the airline must promptly provide services and care to these passengers (CAAT- Article 8) [45]. The official website of Thailand's airports informs that passengers who require special assistance to contact the customer service department at the airport; while the provided facilities are: parking, elevators, restrooms, and telephones [46]. Thai Airways, on its website, provided information about those passengers who need a wheelchair [47].

### **Philippines**

The Republic Act No. 9442 proposes specific measures for the ‘rehabilitation, self-development and self-reliance’ of PWD and, in particular, access to the public transport facilities (subsidization of transportation fare) (Section 32 paragraph f) [48]. The Memorandum Circular (2018-091) facilitates the mobility of PWD and guarantees indiscriminate access to public transportation, providing improved accessibility features such as ramps, signage, and stickers in terminals, stations, or depots following ICAO Doc 9984 [49]. According to the Civil Aeronautics Board (CAB) [50] when a PRM/PWD travel must inform the carrier or the ticketing agent beforehand ‘of the extent of the reduction in physical movement or the nature of the disability’ to clarify if it has the facilities or the capability to serve the passenger’s needs. In this case, the airline may charge additional fees for the handling and assistance. Passengers who require special equipment like oxygen apparatuses, vitals-monitoring machines, and the like may be denied as these cases usually call for non-specialized carriage. The advanced information of the carrier is valid for minors, and senior citizens and it charges a fee. For pregnant women, carriers have applied specific policies regarding the pregnancy term, and they must inform the airline of the true nature of their condition; those in the 7<sup>th</sup> month of pregnancy may be required to sign a waiver before being accepted on board.

### **3. THE WAY FORWARD – LITERATURE REVIEW**

Regulations significantly impact the organizations' operations and are characterized as an intentional intervention of target groups [51]. The target group of this study is the PRM, a significant part of the population. Particular laws and regulations from the UN and international aviation organizations protect, support, and facilitate the transportation of the PWD and other groups (children, pregnant women, etc.) of PRM. The efficient implementation of these is essential.

The role of IOs is vital as they have significant authority, set the agenda and the rules of cooperation between their members, and develop a ‘common regulatory language’ [52]. IOs focus on either procedures or performance; their institutional features influence the response from the subordinated bodies, and interregional and national issues related to institutional qualities of IOs play a key role in respect of their legitimacy [53]. Therefore, IOs (in our case UN and the dominant international aviation organizations) that lead the industries may propose clear instructions for critical issues influencing their members, which should apply these.

All the participants in a regulatory framework, such as governments, regulators, and producers, should cooperate in a highly complex and interlinked system [11, 54]. Except for the IOs, the role of governments is essential, as they are focusing on the improvement of public benefits through imposing various regulations by requiring firms to adopt sustainable practices that influence their bottom line [55]. Thus, government regulations are among the external factors that significantly impact the organization's performance directly and indirectly [56], removing the unnecessary barriers. Thus, government may harm the productivity and competitiveness of the organizations due to the increased operating cost burden [57]. Therefore, the compliance of the firms with regulations has proved costly, as this requires significant changes that the regulators impose on their sectors - some administrative cost of running the regulatory institutions and the implementation of various policies and actions - and all these are related to the provided benefits to consumers; although these costs tend to be passed to the end customers [3, 11, 55]. In these cases, the cost minimization is not always feasible as this is related to the level of the provided services that the regulations are imposed. In the examined

case, some functional key factors (FKFs) are proposed which enable airlines to audit and benchmark PRM related costs, and these are located in nine areas, namely, PRM' transfers; mobility aids; aircraft delays/diversion costs; staff training costs; staff health; safety and welfare; aircraft fixtures and equipment costs; airport costs; transaction costs; and opportunity costs [3].

Furthermore, governments usually focus no handling societal issues and should implement regulations to limit some issues that negatively affect society as a whole [54]. Flexible rules (referred to as 'innovation friendly' and 'smart regulations') are preferable as they assist the regulated firms in achieving the desired outcome but leave the way to them; then, they can innovate and increase their competitiveness [11].

There are supporters and opponents of the regulations, where in the first case saw them as a technocratic device that could exert national controls over significant economic and social issues. In contrast, the opponents saw them as potential burdens of competitiveness and economic activity [12].

Organizational factors seem to affect the adoption of regulations. In particular, according to Park et al. [54], the following organizational factors facilitate the implementation of regulatory reforms: a) higher levels of bureaucratic autonomy, b) strong leadership, c) less authoritarian organizational culture, and d) organizational tasks should be closely related to introduced regulations. Therefore, specific organizational characteristics are required to adopt consistent procedures and policies set by Ios, and the adjustment to the external environment requirements is also significant.

Airports and airlines underestimate the PRM, and uncovering the needs of those passengers and providing high tailor-made services taking into account the expectations of each group, have the potential to create a lucrative niche market [58, 59]. The role of aviation staff is vital to identify the needs and provide high quality services to PRM. However, aviation employees face some difficulties in handling some cases with PRM, and there are significant differences within the aviation industry and the real needs of these passengers [59]. Chang and Chen [58] mentioned the case of EC Regulation 1107/2006 and the US Regulation "Nondiscrimination based on Disability in Air Travel (14 CFR Part 382)" where the airline is permitted to require a passenger to travel with a safety assistant to help them in cases of evacuation and the possibility that an airline may require a medical certificate that clarifies whether a passenger is medically able to travel, both cases in their implementation create problems to employees. Training significantly assists employees in handling unexpected events and providing better services to PWD and PRM [58, 60]. Also, information and communications technology (ICT), particularly passenger information systems, in mobile applications, is essential and assists PRM' travel experience (Shaw and Coles, 2004). In addition, the provision of adequate information to PWD (and PRM) can be achieved by airlines and airport operators' websites [58].

Aviation organizations provided high-quality services to all groups of PRM according to their needs is beneficial for those people and their performance. The close cooperation of all the stakeholders in the PRM transportation is vital. For example, airports should cooperate with all parts (airlines, handlers, aircraft and airport manufacturers, etc.) to provide seamless travel for these customers, which is essential to overall airport functionality and sustainability [61]. The formulation from IOs and implementation from aviation organizations' specific regulations and laws focused on the required services by all PRM groups are highly important.

#### 4. DISCUSSION - CONCLUSIONS

Like all other transport modes, aviation needs to recognize and accommodate the growing passenger segment of PRM. Airports and airlines mainly should make their services more accessible, friendly to this group of passengers, satisfying their needs and achieving significant benefits. Additionally, aviation organizations should not ignore their societal objectives, offering services of equal quality to all. A supportive regulatory system is required to protect PRM' rights to travel by air. International and national organizations should emphasize more on PRM, extending their current focus from PWD, providing detailed instructions in all travel stages.

The critical point of the promotion mainly of the PWD rights and accessibility is the implementation of the UNCRPD, and all the related organizations and countries should implement this (Article 9). At the global level, the role of the UN is indisputable, and it continues to be the only International Intergovernmental Organization having an agenda encompassing the broadest range of governance issues [62]. Moreover, the most prominent aviation organizations, such as ICAO, IATA, and ACI, focused mainly on PWD and some other PRM groups (children and pregnant women) and provided the framework to airlines and airports to efficiently handle these groups of passengers. At the regional level, the regulations and laws developed from IOs should be clarified, adjusted and applied by the countries' members. At the national level, States, through their local Civil Aviation Authorities, adopted these instructions and through their aviation organizations (airports, airlines, ground handlers) provided efficient services to PRM, including PWD. The development of National Programs must be aligned with international laws and regulations. These should focus on improving the accessibility of the transport infrastructure and the quality of such facilities, which may improve traffic safety of PRM and ensure comfort [63]. Also, the number of discrimination laws and constitutional provisions relevant to PRM has increased rapidly in the last years [64].

The above shows that the UN and the IOs emphasize more to PWD and some other groups of PRM (children and pregnant women), and the term PRM is not mentioned. Therefore, it is vital to develop a distinct and expanding international and national 'regulatory community' that shares similar languages, concepts, and concerns [12], and the PRM term and the provided services to these passengers should be included.

The EU and ASEAN have a strong aviation industry with different characteristics. According to UN [65], the Regions rank in accessibility standards are Europe 95%, America 64%, Africa 48%, Oceania 71%, and Asia 73%. Therefore, Europe emphasizes more on accessibility, and one Region may benefit from the other adopting mechanisms and practices that the other successfully apply. In the examined case, the EU seems to have a more appropriate regulatory framework, but ASEAN needs more work in this direction. The ASEAN Region should propose specific instructions for handling PRM, like the EU. In particular, the implementation of EC Regulation 1107/2006 and the establishment of NEBs and ANEDs in ASEAN countries are the most important to improve the current situation. Thus, the use of NEBs and ANEDs, as passenger complaints and relevant research may consist of the basis for efficient feedback, which leads to the development of the appropriate regulations and laws and the required services by PRM. Furthermore, the regulations, directives, and laws that promote the accessibility of all transportation modes and websites applied in the EU can be adjusted and implemented in ASEAN. In both Regions, organizations that represent the various groups of PRM should be involved in the formulation or the update of the current legislation, from the design and planning phase until the implementation and use of the provided services to achieve effective harmonization and find long-term solutions [1]. Thus, continuous studies of the needs

of those passengers at each touchpoint in their journey are critical [61]. On this matter, adding the rich knowledge of aviation employees about the transportation of PRM will be necessary. At the aviation organization level, leadership and senior management's role in creating a culture of inclusion are vital [61]. Also, the introduction of incentives and policies to push the operators to go further from the minimum legal requirements is suggested [1]. On the other side, penalties should be imposed in cases that the operators do not provide the required services to PRM [11]. Finally, a more bottom-top approach is needed to formulate those regulations that ideally respond to the real needs of the PRM and industry.

Conclusively, the focus of interest of all the participants in the aviation industry, like airports, airlines, handlers, aircraft manufacturers, relevant IOs, and lawmakers, should move from PWD to PRM. The EU has a more efficient regulatory framework covering all the issues regarding the transportation of PRM compared to ASEAN. The latter should establish a framework such as EU's Regulation 1107/2006, NEB and ANED, and apply to all Member States. Both Regions should cooperate with the aviation industry and the various groups of PRM to adjust accordingly their regulatory framework. Finally, common rules for all world Regions that describe in detail the offered transportation services to PRM should be a top priority for the aviation industry.

## 5. FURTHER RESEARCH AND LIMITATIONS

Future studies will include other geographical Regions, like the more advanced N. America, and identify critical issues that each Region may adopt from the others. Furthermore, the in-depth interviews with regulations experts and representatives of PRM groups will provide valuable insights.

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